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Findings from the Health Facility Survey 2004-05, Marib Governorate, Yemen

March 2006

Prepared by:

Partners for Health Reform*plus*



The Republic of Yemen
Ministry of Public Health & Population
Leading Yemen to Better Health, Safety and Well Being

This document was produced by PHR*plus* with funding from the US Agency for International Development (USAID) under Project No. 936-5974.13, Contract No. HRN-C-00-00-00019-00 and is in the public domain. The ideas and opinions in this document are the authors' and do not necessarily reflect those of USAID or its employees. Interested parties may use the report in part or whole, providing they maintain the integrity of the report and do not misrepresent its findings or present the work as their own. This and other HFS, PHR, and PHR*plus* documents can be viewed and downloaded on the project website, www.PHRplus.org.



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Order No TE 092



Mission

Partners for Health Reformplus is USAID's flagship project for health policy and health system strengthening in developing and transitional countries. The five-year project (2000-2005) builds on the predecessor Partnerships for Health Reform Project, continuing PHR's focus on health policy, financing, and organization, with new emphasis on community participation, infectious disease surveillance, and information systems that support the management and delivery of appropriate health services. PHRplus will focus on the following results:

- ▲ *Implementation of appropriate health system reform.*
- ▲ *Generation of new financing for health care, as well as more effective use of existing funds.*
- ▲ *Design and implementation of health information systems for disease surveillance.*
- ▲ *Delivery of quality services by health workers.*
- ▲ *Availability and appropriate use of health commodities.*

March 2006

Recommended Citation

Partners for Health Reformplus Project. March 2006. *Findings from the Health Facility Survey 2004-05, Marib Governorate, Yemen*. Bethesda, MD: PHRplus Project, Abt Associates Inc.

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Contract/Project No.: HRN-C-00-00-00019-00

Submitted to: USAID/Yemen

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Abstract

The 2005 Marib Health Facility Survey, supported by the U.S. Agency for International Development/Yemen through the Partners for Health Reform*plus* (PHR*plus*) Project, inventoried all private and public health facilities in the governorate. The purpose of the survey was to collect and summarize detailed information on infrastructure, ownership, health services provided, medical equipment, and financing of all facilities in the governorate. In addition, survey teams used handheld global positioning system units to pinpoint the exact geographic locations of villages and health facilities, and digital cameras to document interior and exterior conditions of all facilities. The survey identified a total of 113 facilities in Marib; the interview was completed in the 74 facilities that were open and operational at the time of the survey. PHR*plus* is using the data from this survey to develop district maps and a health facility atlas for health officials to better understand health care conditions, allocation of resources, location of each health care alternative, and proximity to and within communities of each health facility relative to others. In addition, PHR*plus* is creating a health facility viewer CD-ROM application to allow governorate and district health management teams to quickly review, query, and compare survey data. Survey results will be combined with demographic and geospatial data in a geographic information system to provide evidence-based analyses and results to increase the efficiency and equity of the Yemen health care system.

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Acronyms

AIDS	Acquired Immune Deficiency Syndrome
BSc	Bachelor of Science
CT	Computed Tomography
D&C	Dilation and Curettage
DPT	Diphtheria, Pertussis, and Tetanus Vaccine
ENT	Ear, Nose and Throat
GIS	Geographic Information Systems
GPS	Global Positioning System
HIV	Human Immunodeficiency Virus
HTML	Hypertext Markup Language
ICU	Intensive Care Unit
IUD	Intrauterine Device
MoPHP	Ministry of Public Health and Population
MRI	Magnetic Resonance Imaging
PHR_{plus}	Partners for Health Reform _{plus}
SD	Standard Deviation
STD	Sexually Transmitted Disease
TB	Tuberculosis
TT	Tetanus Toxoid
USAID	U.S. Agency for International Development

Acknowledgments

The Partners for Health Reform*plus*/Yemen project wishes to express its appreciation to the U.S. Agency for International Development/Yemen for its support to the health facility survey in the five target governorates of Amran, Al Jawf, Shabwah, S’adah, and Marib. In particular, we wish to thank Dr. Ahmed Attieg, Senior Health Advisor in Sana’a, for his prudent guidance and his commitment to establishing a credible health information system and geographic information system for Yemen’s health sector.

The survey was conducted in collaboration with the Ministry of Public Health and Population and the Governorate Health Office. Special thanks to His Excellency, Dr. Mohammed Al-Noami, Minister of Public Health and Population, for his vision and recognition of the importance of health information and GIS; Dr. Abdul Majed Al Kholaidi for his leadership role in heading the Technical Committee responsible for approving and getting the survey initiated; and Dr. Abdullah Al Ashwal for his continued support and for his initiative in conducting this survey nationwide.

For the Marib survey, we would like to extend our appreciation to Dr. Abdrabah Mftah, Marib Director of Health; and the district health managers and facility managers who participated in making this survey a success. We are also grateful to the survey teams who climbed the highest mountains, traveled on what we call “no roads” to reach the most remote facility, take the GPS readings, snap photos, and interview health facility staff.

The core team has spent the past year managing all aspects of the larger survey (for the five USAID-targeted governorates), from pre-testing the survey instrument to cleaning and preparing codes, names, and initial maps in preparation of the survey, and then conducting the survey, entering the data, cleaning the data, and writing this report. The work and experiences of the PHR*plus* team will be passed to other MoPHP survey teams that are being funded through other donors. Hopefully, the results will form the basis of a national information database complete with GIS tools and applications. The PHR*plus*/Yemen team included: Dr. Abdul Jabbar Al Ghaithi, survey manager from the MoPHP; Mr. Abdulkader Nueman, database expert; Khalil Gobran, GIS expert; Mr. Abdulwahed Thabet, technical advisor; Mr. Abdul Salam Al Kohlani, financial manager; Ms. Dalia Al Eryani, technical assistant and translator; Ms. Bilqis Al Rimi and Mr. Salim Al Rimi, data entry; Mr. Mohamed Hani, administration/driver; and Ms. Cheri Rassas, Chief of Party.

The team greatly appreciates the technical guidance from Dr. Kathy Banke who worked with the team in Yemen and through emails on the Amran report, which serves as our model technical report for each of the five governorates. She is also the technical reviewer for the Marib report. Last but not least we must recognize the encouragement, enthusiasm, vision, and hard work that Mr. Mark Landry has provided – the propeller behind all of this work.

Executive Summary

The 2005 Marib Health Facility Survey is the second survey of all health facilities in Marib Governorate and follows the Yemen Health Facility Survey conducted in 1998. The survey, supported by USAID/Yemen through the Partners for Health Reform*plus* (PHR*plus*) Project, inventoried all private and public health facilities in each of the 14 districts of the governorate. Handheld global positioning system (GPS) units were used to pinpoint the exact geographic locations of villages and health facilities. Ten survey teams, including team leaders from the Ministry of Public Health and Population (MoPHP) and surveyors from governorate and district health teams, took digital photos of the facilities in order to document their condition. An operations center was set up in the Governorate Health Office to receive and verify incoming data from the teams on a daily basis.

The main purpose of the survey was to collect and summarize detailed information on infrastructure, ownership, health services provided, medical equipment, and financing of all facilities in the governorate. The methodology – collaborating with central-, governorate-, and district-level staff – assured a participatory process that focused on capacity building and consultation for and with the end users of the data. Survey results will be combined with demographic and geospatial data in a geographic information system (GIS) to develop capacity for evidence-based planning and budgeting decisions.

The survey identified a total of 113 facilities in Marib; the interview was completed in all 74 facilities that were open and operational at the time of the survey. Primary findings for each of the survey subject areas are presented below.

General Background

A total of 15 hospitals, 17 health centers/clinics, and 81 health units were located in Marib. Interviews were completed in 13 hospitals, 12 health centers/clinics, and 49 health units. Except for two private health clinics, all were public facilities. Marib has seen a dramatic increase in the number of health facilities opening in the last 10 years. Hospitals were equally distributed between urban and rural areas, while virtually all health units served rural populations. Health centers and clinics were somewhat more likely to be located in urban areas.

Infrastructure

All private facilities had clean water, electricity, ground telephone lines, and sewage systems. Public facilities, however, were often lacking in these areas – clean water was only available in 71 percent, toilets in 76 percent, electricity in 44 percent, and ground telephone lines in 10 percent of all public facilities. Health units were least likely to have each of these basic services available; of particular concern is the lack of electricity in 74 percent of the health units, clean water in 37 percent, and toilets in 35 percent. In addition, two rural hospitals had no clean water.

Most facilities with clean water depended on water tanks to provide the supply, and facilities with electricity received service from the government, their own generators, or a combination of the two. Virtually all sewage systems were in the form of pits, though one health unit reported sewage

disposal in the open. Systems for separating medical waste and garbage existed in fewer than half of all interviewed facilities, and were more common in private facilities than public facilities.

Health and Medical Services

The services provided by the largest number of public facilities included general medicine (97 percent), immunization (72 percent), reproductive health (44 percent), and health education (39 percent). Basic radiology services were available in 11 hospitals and health centers, but no public facilities in Marib provided echocardiograms, computed tomography (CT) scans, magnetic resonance imaging (MRI), or endoscopy.

Both of the private facilities provided general medicine and laboratory services, while neither provided any health education services, and only one provided any type of immunization. No facilities in Marib, private or public, provided Norplant, dermatology, orthopedics, endoscopy, CT scans, or MRIs, or had laboratory services for processing tissue samples. HIV testing was performed in just 24 percent of all hospitals and clinics (three public hospitals, one health center, and two private health clinics).

Other Activities and Services

The proportion of facilities offering services for the control of epidemic diseases ranged from 1 percent for bilharzia, acute respiratory infections, and tuberculosis to 18 percent for malaria. Hospitals were most likely to offer malaria and bilharzia control services. Health centers were more likely to offer control services for diarrhea, tuberculosis, and acute respiratory infections. A referral system for delivery emergencies was operating in both of the private facilities and two-thirds of the public facilities providing normal delivery services. The survey revealed that the Guidelines for Emergency Delivery Services were used in only 32 percent of all public facilities providing normal delivery services and in one of the two private facilities. Just over half of the public hospitals offering normal delivery services used the guidelines. The Guidelines for Infection Prevention in Safe Motherhood Services were used by 21 percent of all public health facilities and by one of the private health facilities. Guideline usage was highest (69 percent) in public hospitals.

Inpatient

Inpatient sections were available in 11 hospitals and health centers/clinics in Marib, including both private health clinics. No facilities in the governorate performed cataract surgeries, and one public facility provided kidney stone operations. Caesarean deliveries were performed by only one public hospital and one private health clinic. One health clinic in Marib, a private facility, had intensive care inpatient rooms.

Health Cadre

The facilities surveyed enumerated a total of 770 health staff (728 in public facilities and 42 in private facilities). Of these, 87 percent were males, with no difference between public and private facilities. In public facilities, female staff were most likely to be either midwives (45 percent) or counselors (36 percent). In private facilities, the four female staff were either midwives (2), nurses (1), or specialists (1). Specialists made up a larger proportion of the staff in private facilities than in public facilities, and private facilities had a larger proportion of foreign staff than public facilities (4.8 percent vs. 2.6 percent, respectively).

Medical Equipment

The survey conducted an inventory of equipment in public health facilities. All hospitals and health centers had examination beds, sphygmomanometers, stethoscopes, and scale and height measures for children, with most facilities reporting at least 70 percent of these pieces of equipment to be functioning. Functioning ophthalmoscopes were available in just eight hospitals and four health centers. Health units were most likely to have stethoscopes, thermometers, examination beds, and sphygmomanometers, and none had ophthalmoscopes or diagnostic auriscopes. Microscopes and centrifuges were most available in hospitals and health centers, but not all of these items were functional. Only seven hospitals had refrigerators, and six hospitals had sterilization machines.

Drug Availability

The availability of any drugs was assessed for all 72 public health facilities, and 79 percent stated that they had at least one type of drug available. However, one of the hospital reported not having any drugs available at all. The governorate was the primary source of drugs for all public facilities.

Financial Allocations

Just 58 percent of public facilities reported regular receipt of allocations to cover operational expenses during the previous year, ranging from 90 percent of health centers to 49 percent of health units. Exemption systems were available in almost all of the public hospitals and approximately half of the health centers and health units, usually providing either free or reduced cost services for patients unable to pay.

Next Steps

Results from the survey are intended to inform governorate and district health management teams. For example, the data can be used for planning, justifying budgets and future investments, and addressing resource gaps. Additional products and tools are being created to maximize the use of the survey data. Namely, *PHRplus* is developing district maps and a health facility atlas for health officials to better understand health care conditions, allocation of resources, location of each health care alternative, and proximity to and within communities of each health facility relative to others. Additionally, the project is creating a health facility viewer, a CD-ROM application to allow governorate and district health management teams to quickly review, query, and compare survey results. The survey data can be readily updated and maintained with each substantive change in facility conditions. The data stored electronically in the health facility database and health facility viewer can be updated to reflect future changes. Lastly, the survey results are a critical input to the health GIS applications being developed to provide evidence-based analyses and results to increase the efficiency and equity of the Yemen health care system.

1. Background

1.1 Marib Governorate

Marib Governorate is located in eastern Yemen, approximately 170 kilometers east of the capital of Sana'a. Marib shares borders with four governorates and contains 14 districts (Table 1-1). In the last national census (2004), the population of Marib was estimated to be 241,640 people, ranking 20th in population size among Yemen's 21 governorates. The governorate is 31,418 square kilometers in size and characterized by very challenging topography and roads that are often impassable, making access to the most remote facilities quite difficult.

Table 1-1. List of districts in Marib Governorate, Yemen

Al Abdiyah	Majzar
Al Jubah	Marib
Bidbadah	Marib City
Harib	Medghal
Harib Al Qaramish	Raghwan
Jabal Murad	Rahabah
Mahliyah	Sirwah

The following maps show the location of Marib Governorate (Figure 1-1) and its districts (Figure 1-2).

Figure 1-1. Map of Yemen, with five USAID target governorates highlighted

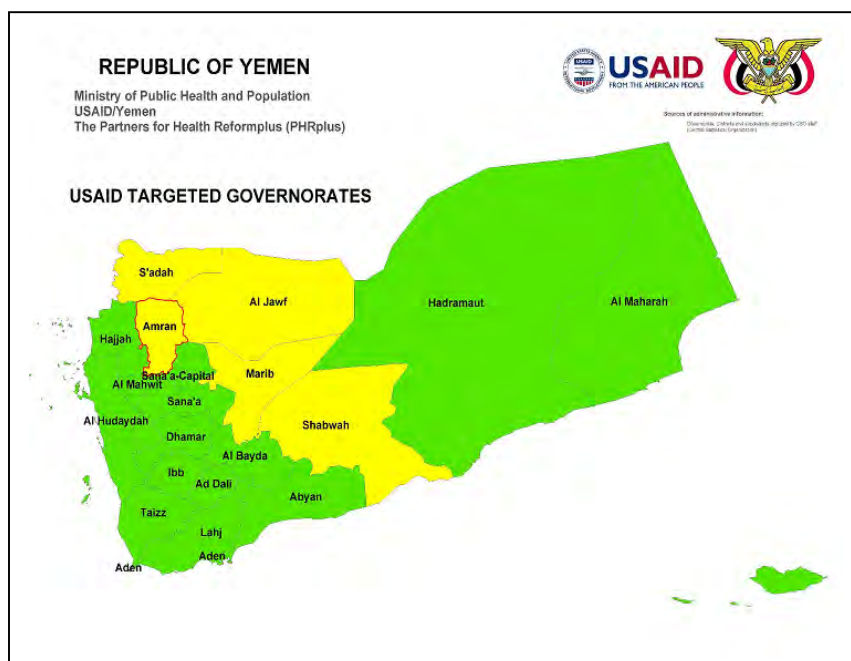
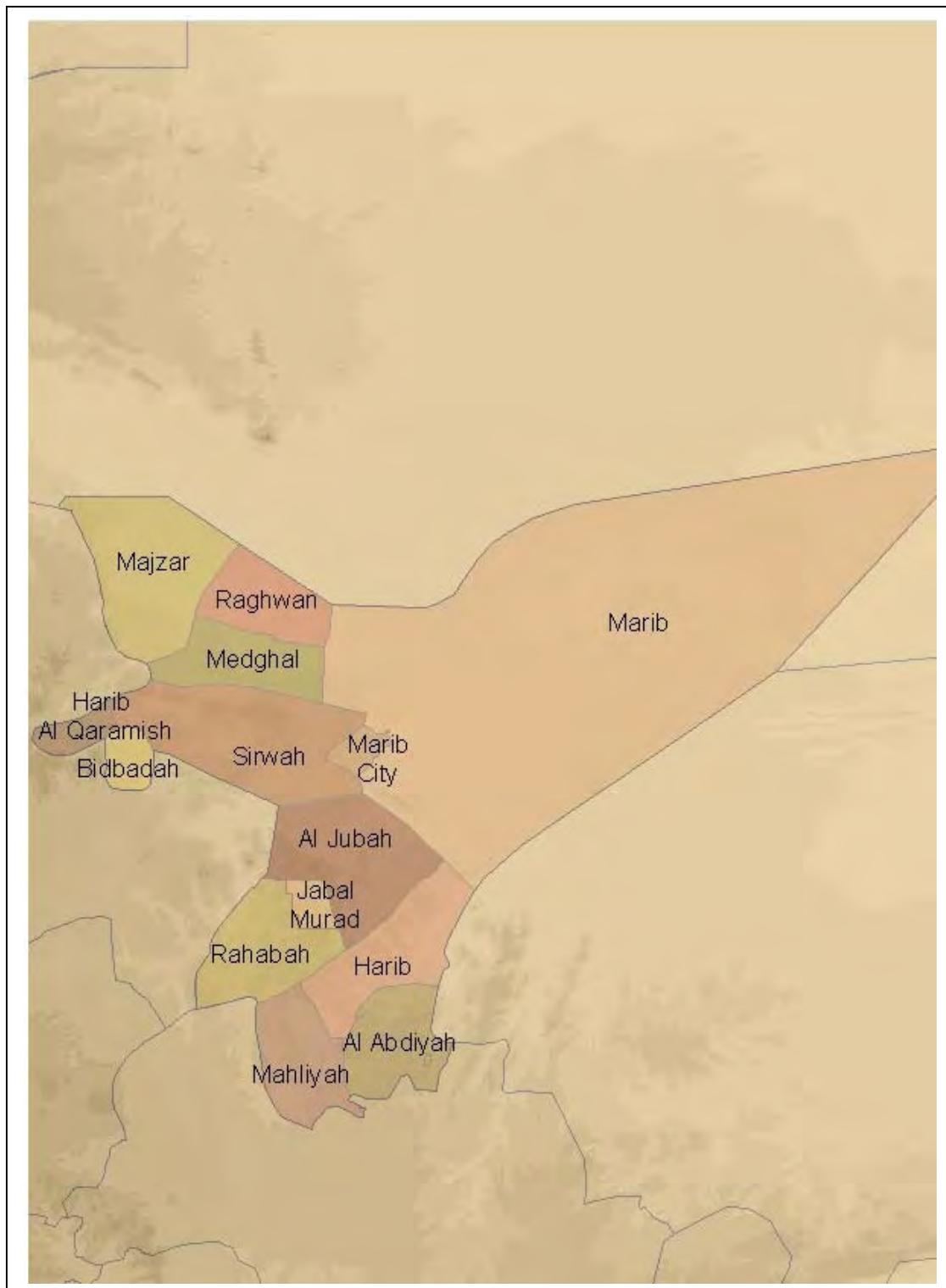


Figure 1-2. Marib Governorate, Yemen



1.2 Health Facility Survey Overview

In close collaboration with the Republic of Yemen's Ministry of Public Health and Population's (MoPHP) General Directorate of Health Information and Statistics, the U.S. Agency for International Development (USAID)/Yemen's Partners for Health Reform*plus* Project (PHR*plus*) conducted a health facility survey in the five USAID/Yemen target governorates of Amran, Al-Jawf, Marib, Sa'adah, and Shabwah during a 12-month period beginning in September 2004. The survey inventoried all private and public health facilities in each district of the five governorates and used handheld global positioning system (GPS) units to pinpoint the exact geographic locations of villages and health facilities. In addition, the 10 survey teams took digital photos of the facilities in order to document their condition. Each team included a team leader from the MoPHP and surveyors from the governorate. These teams were trained in the use of GPS, digital cameras, and how to administer the survey and record the data. Information collected included data on facility type, location, infrastructure, staffing, services provided, equipment, records kept, availability of drugs, budgets and resources, and problems and obstacles.

Survey results were analyzed at the governorate level; the information will be disseminated to each governorate through workshops, which will include governorate and district health management teams and select facility managers. Additional products and tools are being created to maximize the use of the survey data. Namely, PHR*plus* is developing district maps and a health facility atlas for health officials to better understand health care conditions, allocation of resources, location of each health care alternative, and proximity to and within communities of each health facility relative to others. Additionally, PHR*plus* is creating a health facility viewer (a CD-ROM application) to allow governorate and district health management teams to quickly review, query, and compare survey results. The survey data can be readily updated and maintained with each substantive change in facility conditions. The data stored electronically in the health facility database and health facility viewer can be updated or modified to reflect future changes. Lastly, the survey results are a critical input to the health GIS applications being developed to provide evidence-based analyses and results to increase the efficiency and equity of the Yemen health care system.

1.3 Survey Objectives

The Health Facility Survey is a subcomponent of the Yemen Family Health Survey that was conducted in 2003. This survey provides an inventory of all private and public health facilities. The objective is to establish reliable and accurate baseline data for the health information system. These data can be used by the MoPHP, other ministries, governorate and district health teams, health facility managers, organizations working in the health sector, and donors to plan and to improve services and make evidence-based decisions on health sector investments.

2. Methodology

(See also Annexes A and B)

2.1 Health Facility Survey Management and Structure

2.1.1 Health Facility Survey Management

The Health Facility Survey operations were organized to facilitate all aspects of survey conduct, from field work to data analysis. The survey was overseen at the central level by a survey manager (appointed by the Minister of Health). The survey manager was responsible for:

- ▲ Running all the survey field activities;
- ▲ Daily follow up of team performance;
- ▲ Solving all problems and obstacles;
- ▲ Coordination with Governorate Health Office;
- ▲ Daily contacts with PHRplus and MoPHP; and
- ▲ Daily reporting about performance and problems as well as solutions taken to solve problems.

At the central level, the survey manager worked closely with the financial manager and four additional staff (survey designer, database designer, GIS/GPS expert, and technical assistant). In addition to the central team, the survey included 36 persons conducting data verification, cleaning, and analysis (Table 2-1). The complete list of survey staff is provided in Annex A.

Table 2-1. Yemen Health Facility Survey Staff

Job Title	Place of work	Number
Survey manager	PHRplus	1
Financial manager	PHRplus	1
Revision department	PHRplus & MoPHP	5
Data processing unit	PHRplus & MoPHP	6
Field work teams	MoPHP and health office	23
Total staff		36

Central-level staff coordinated activities with five support and control units, one located in each of the health offices of each of the governorates. The Governorate Health Office provided space and assistance in establishing a Health Facility Survey Office. PHRplus supplied a computer network, printers, and supplies to support the operations. These field offices in each governorate were responsible for reviewing, coding, entering, and cleaning data collected in the governorate before sending the data to the central level for verification and analysis.

2.1.2 Health Facility Survey Teams

Ten survey teams were assembled to conduct the survey. Each team consisted of a team leader from the MoPHP and a surveyor from the governorate. The team leader was responsible for supervising the team and for working with the GPS unit and digital camera. The surveyor collected the survey data. Each team traveled with a driver from the governorate/district who guided them to the health facilities.

2.1.3 Instruments

The survey consisted of 17 pages divided into the following sections:

- ▲ General information
- ▲ Facility infrastructure
- ▲ Health services performed
- ▲ Disease surveillance
- ▲ Staffing
- ▲ Common diseases
- ▲ Medical equipment
- ▲ Drugs availability
- ▲ Financial resources

Each team was provided with a survey kit, which included a reference manual for conducting the survey. In addition, each team was supplied with a GPS unit and digital camera. The GPS unit was used to record the precise latitude and longitude map coordinate of each health facility. The digital camera was used to take photos documenting the exterior and interior conditions of each facility. The survey was conducted in Arabic. See Annex B for the English version of the survey instrument.

2.1.4 Pre-test

The pre-test was conducted in three districts of Amran Governorate (Amran, Khamir, and Huth districts) during September 2004. A total of three hospitals, three health centers, and four health units

were selected for the pre-test. Based on the pre-test experience, modifications were made to the survey instrument. The manual was also revised to solve problems encountered during the pre-test.

2.1.5 Training

One training course was held during November 2004. The course, held in Sana'a, focused on training team leaders to use GPS to determine the position of health facilities and to use digital cameras to take and save photos of facilities.

During June 2005, the six-day training for team leaders and surveyors took place in Marib. The teams received intensive instruction on how to conduct the survey and record answers. The last two days of training were devoted to evaluating the trainees and then selecting 13 team leaders and 15 surveyors. The three surveyors with the strongest skills were selected to work in the control section, leaving 10 to conduct the field work. The two remaining surveyors were kept as alternates.

2.1.6 Implementation Timeline

Marib was the fourth of the five governorates in which the survey was conducted. It is important to note that the MoPHP intends to conduct the survey nationwide. USAID/Yemen financed the five target governorates and assisted, through *PHRplus*, in the design of the survey instrument approved by the MoPHP Technical Committee. The Project developed the training materials, reference manuals, and methodology. Survey development began in April 2004, and the survey in Marib was completed in June 2005. Data verification was done in August 2005. The timeline for key survey elements is presented in Table 2-2.

Table 2-2. Implementation activities and time period

Activity	Time period
Survey development	April – September 2004
Pre-test	September 2004
Survey revision	September-October 2004
Team leader training	November 2004
Team training	June 2005
Survey conducted	June 2005
Data verification	August 2005

2.2 Data Verification/Quality Control

To verify data quality, a data audit was done in a random selection of 10 percent of all health facilities in each governorate. The random sample was allocated proportionally to represent the percentage of facilities in each of the following three categories: 1) facilities under construction (9 percent), 2) facilities temporarily closed at the time of the survey (9 percent), and 3) facilities open (82 percent) (Table 2-3).

Table 2-3. Number of facilities selected for data verification

Category	Number of facilities selected randomly for data verification
Under construction	1
Temporarily closed	1
Open	9
Total	11

During the random data verification visits, teams attempted to re-interview the same person who had completed the interview at the initial visit. If this person was not available, teams were instructed to conduct the interview either with the original person's replacement or with the person in charge of the facility. The data verification survey consisted of a subset of 28 questions from the original survey, with a focus on general health facility data, infrastructure, waste and sewage, health and medical services provided, as well as selected questions related to health cadre and medical equipment.

Data collected during the random data verification visits were entered into tables using Microsoft Access and were compared to the original data collected using the Data Compare utility in Epi Info version 3.2.2. Each difference identified was further scrutinized to determine whether it was a "real" difference or a difference likely due to changes over time or factors other than actual data errors; the differences in the second category were removed from the verification analysis. When the number of "real" discrepancies was noted and expressed as a percentage of the total number of data points compared, overall data accuracy was estimated to be 94 percent.

2.3 Data processing and analysis

Data were coded and entered into a database developed in Microsoft Access. Analysis was done with Microsoft Excel, SPSS and Epi Info. Data are presented as proportions and means plus or minus (+/-) standard deviations (SD).

Results are presented by health facility type and by sector of ownership (public/private). Public sector health facilities in Yemen are divided into three categories: hospitals, health centers, and health units. Table 2-4 summarizes the types of services provided by each category of facility.

Table 2-4. Health services provided, by public facility type and level

Level	Type of facility	Services Provided
Fourth	Specialized Hospital	Rare specialized services – Cancer – Heart disease – Kidney disease – Endocrine
Third	General Governorate Hospital	Caesarean sections – Stomach pain emergencies – Casualties – Sexually transmitted diseases (STDs) – Intensive care unit (ICU) for children – Pediatrics – Heart & chest disease – Non-communicable diseases – Chronic diseases – Anesthesia – Blood transfusion – Laboratory – X-ray – Training medical students, doctors, and nurses
	General District Hospital	Caesarean sections – Stomach pain emergencies – Casualties – STDs – ICU for children – Pediatrics – Heart & chest disease – Non-communicable diseases – Chronic diseases – Anesthesia
Second	Health Center	Immunization – Diarrhea and respiratory problems – Malnutrition – Malaria & tuberculosis (TB) – Family planning – General health development – Prenatal & postnatal care – Anemia – Delivery – D&C – Casualties – Pregnancy test – Testing complications of TB – Blood Types – Hemoglobin – X-rays (some facilities)
First	Health Unit - Permanent	Immunization – Prevention of diarrhea and respiratory problems – Malnutrition – Malaria & TB – Family planning – General health development – Prenatal & women's care
	Health Unit - Temporary	Prevention of diarrhea and respiratory problems – Malnutrition – Malaria & TB – Family planning – General health development – Prenatal care – Anemia

Figures 2-1 through 2-3 are photos taken during the survey to demonstrate the three types of health facilities: health units, health centers/clinics, and hospitals. Figure 2-4 provides an example of the challenging terrain that must be traversed to reach many of the most remote facilities.

Figure 2-1. Al Oshal Health Unit, Rahabah District, Marib Governorate



Figure 2-2. Harib al Qaramish Health Center, Harib Al Qaramish District, Marib Governorate



Figure 2-3. 26 September Hospital, Al Jubah District, Marib Governorate



Figure 2-4. Encountering poor road conditions en route to a facility



In addition to government-owned (public sector) facilities, a number of private sector health facilities operate in Yemen. Two types of private sector facilities exist: hospitals and health clinics (which are equivalent to health centers in the public sector). Private sector facilities are classified based on the following definitions:

- ▲ Hospital: Must have the equipment and qualified cadres to do diagnostic and curative services. Must contain at least 30 beds and have all the basic medical services (general surgery, pregnancy care, internal medicine, and pediatrics).
- ▲ Specialized hospital: Must contain at least 20 beds and have the equipment and qualified cadres for at least one specialization.
- ▲ Clinic: Must have at least 10 beds and perform diagnostic and curative services.

As noted above, Marib Governorate has two private health facilities; both are clinics.

This technical report focuses on providing a governorate-level overview of health resources, with an emphasis on exploring differences between public and private sector facilities and between facility types. It is not meant to comprehensively cover every variable collected during the survey, but rather to present key findings and to stimulate additional research and analysis with the goal of providing an information base for planning and action. The survey database will be provided to the MoPHP and to the governorate health offices. Technical reports will be published on the MoPHP website.

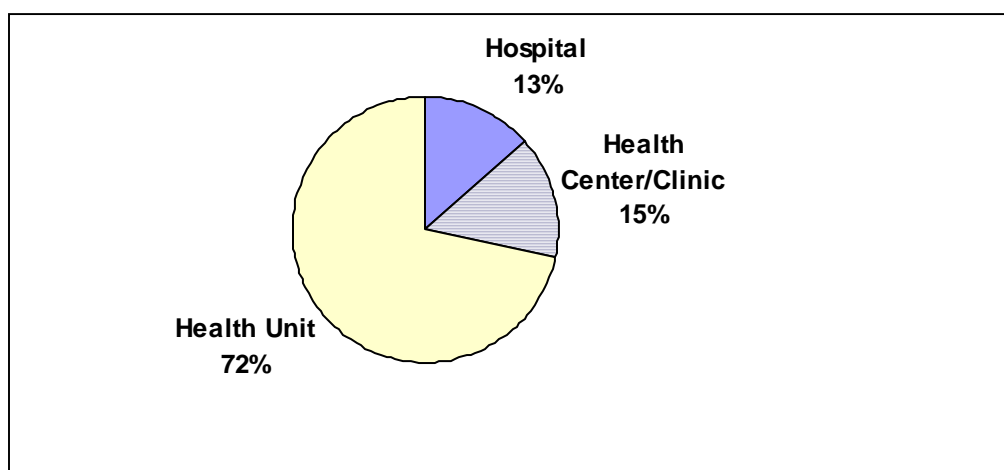
3. Characteristics of Facilities

(See also tables C-3-1 through C-3-7 in Annex C)

3.1 Facilities and Respondents

Marib Governorate provided the survey office with a master list of 91 facilities in Marib, the official complete inventory of all facilities in the governorate as of the end of 2004. The survey team also identified an additional 22 facilities not on the master list, so that in total 113 facilities were located in Marib in 2005. The survey documented 15 hospitals, 17 health centers/clinics, and 81 health units as of June 2005 (Figure 3-1).

Figure 3-1. Distribution of facility types in Marib, 2005



Of the 113 total facilities located by the survey, 111 (98 percent) were public and two (2 percent) were private (Table 3-1). Both of the private facilities were health clinics. By definition, all health units belonged to the public sector.

Table 3-1. Distribution of health facility ownership, by facility type

Ownership	Hospital		Health Center/Clinic		Health Unit		Total	
	n	(%)	n	(%)	n	(%)	n	(%)
Public	15	(100)	15	(82.2)	81	(100)	111	(98.5)
Private	0	(0.0)	2	(11.8)	0	(0.0)	2	(1.8)
Total	15	(100)	17	(100)	81	(100)	113	(100)

The survey team found that not all of the 113 facilities were actually open and operating at the time of the survey. Three facilities were permanently closed, 10 were temporarily closed, and 17 were under construction, (Figure 3-2). In addition, the survey was only partially completed in nine facilities (eight health units and one health center) due to either absence of the appropriate health worker or health workers who did not know the answers to at least some of the questions. The survey was completed for 74 facilities that were open at the time of the survey (13 hospitals, 12 health centers/clinics, and 49 health units). Only these 74 facilities are included in the remainder of the analyses in this report. A complete summary of the number of facilities in each district is included in Annex C (Table C-3-1). Figure 3-3 shows the distribution of all facilities in the governorate.

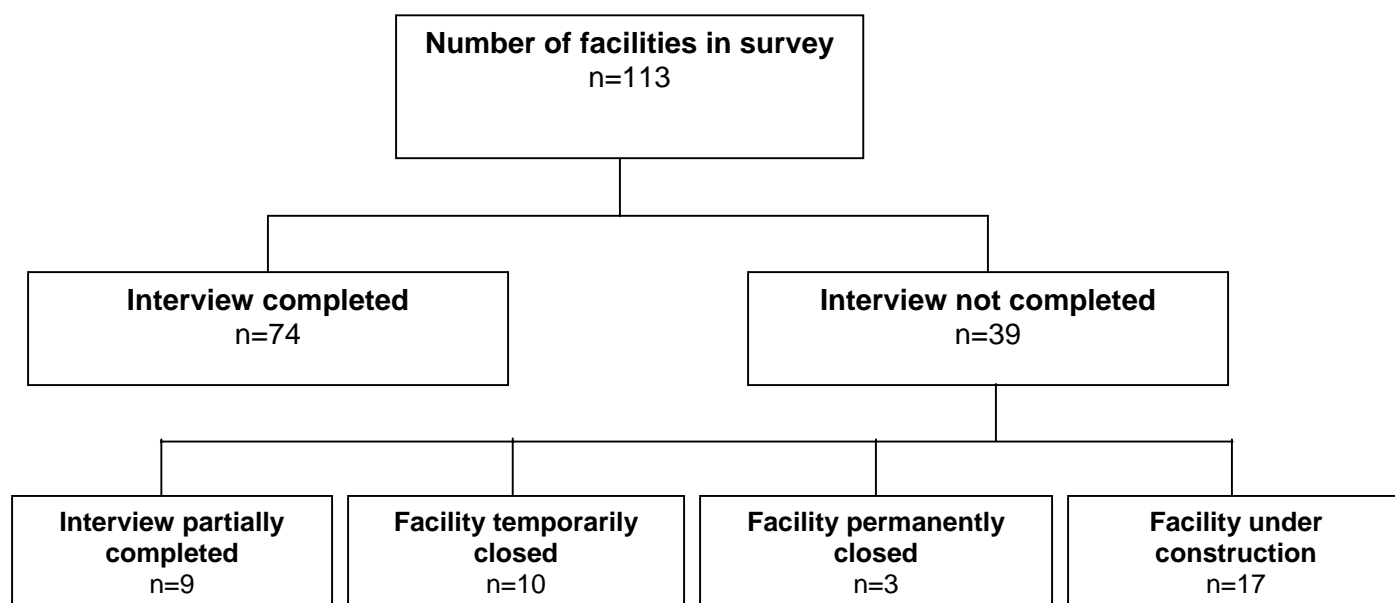
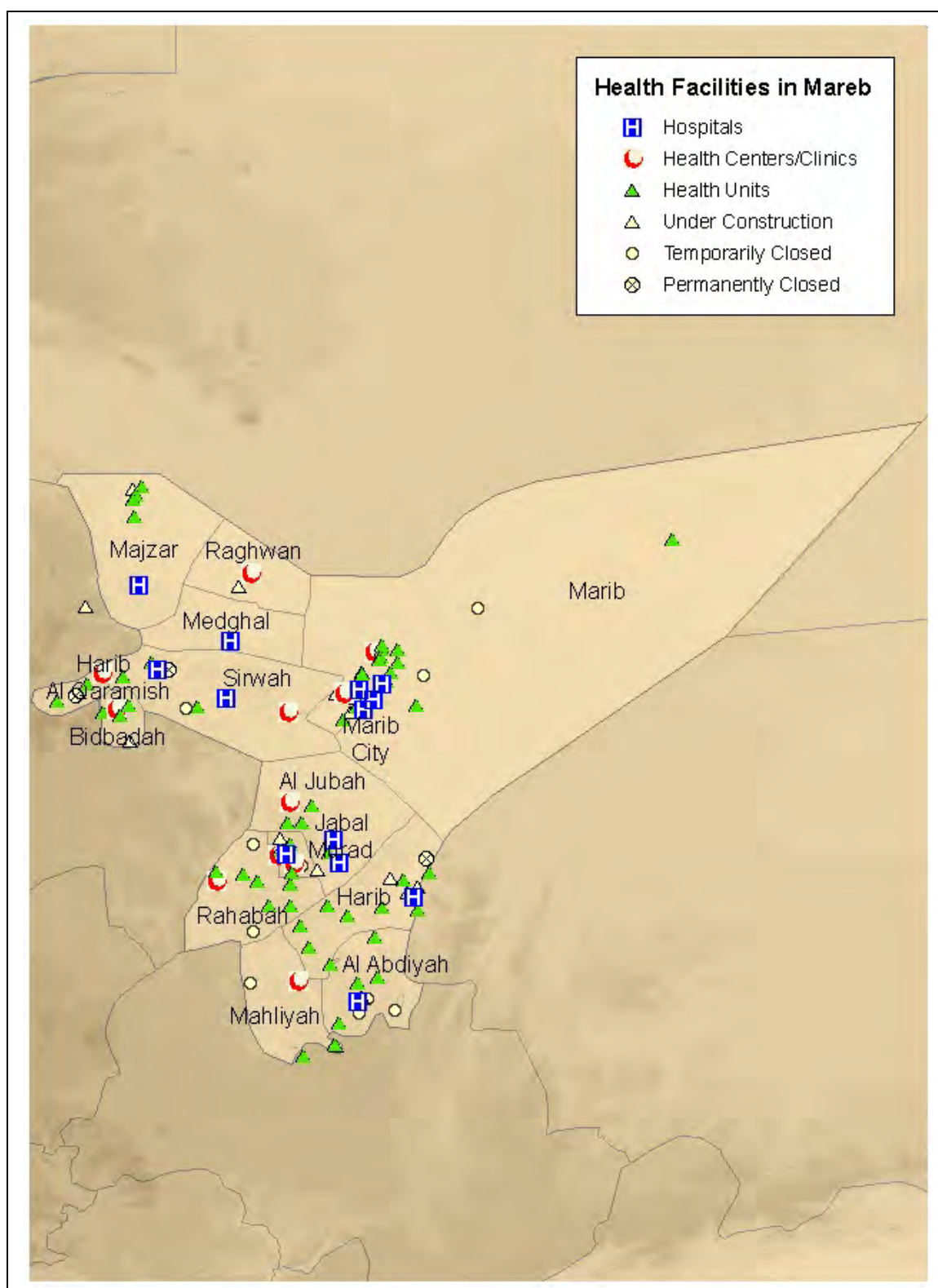
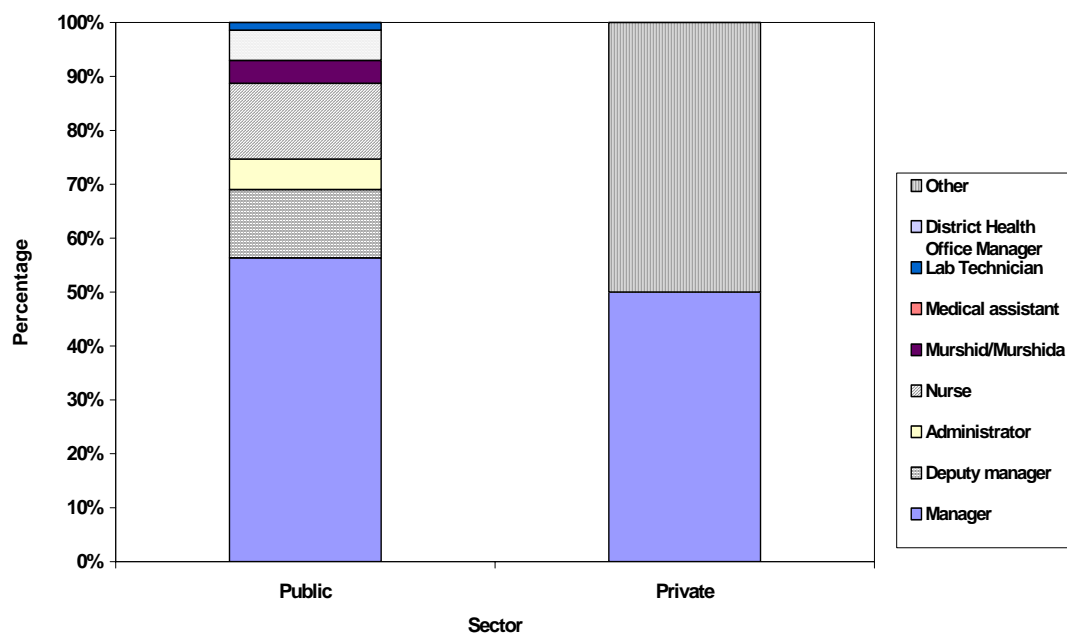
Figure 3-2. Facility survey results, Marib Governorate, 2005

Figure 3-3. Distribution of facilities in Marib, 2005, by facility type and status



Most (68 percent) of the survey respondents were the managers or deputy managers of the health facilities, though respondents also included facility staff in other positions (Figure 3-4). The majority of respondents for public facilities were health facility managers (56 percent), deputy managers (13 percent), nurses (14 percent), and administrator/medical assistant (6 percent). For the two private facilities, one of the respondents was the health facility manager.

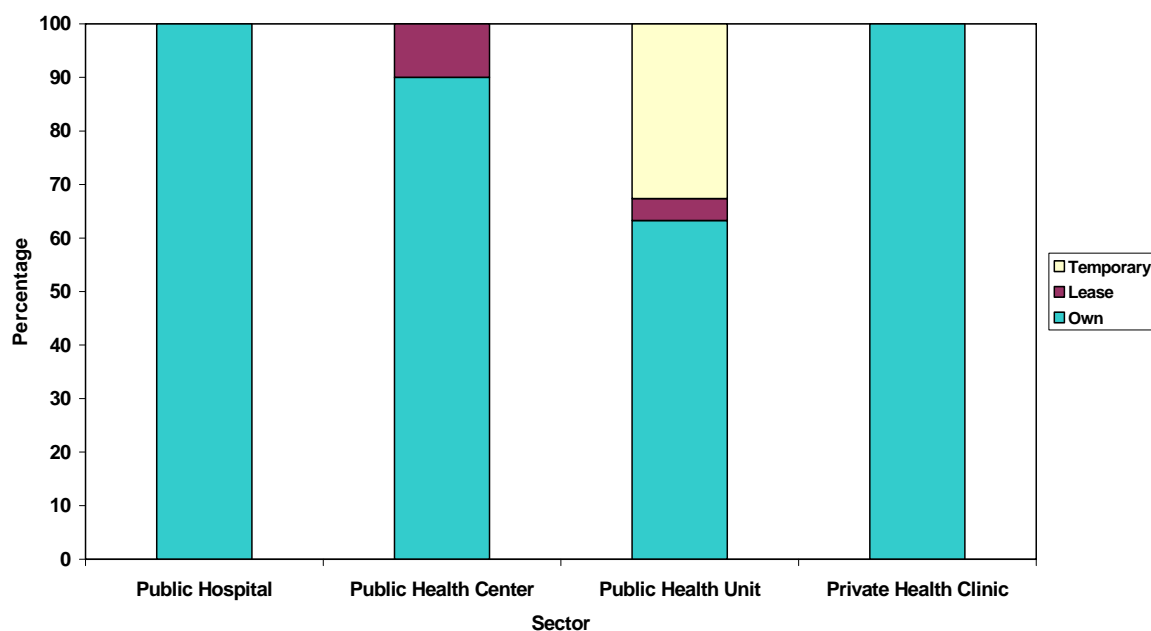
Figure 3-4. Positions of survey respondents, by sector



3.2 Facility Location

The 13 public hospitals were equally distributed between urban and rural areas, while most (70 percent) public health centers and both private health clinics were located in urban areas (Figure 3-5). The majority (92 percent) of health units were located in rural areas.

Figure 3-5. Distribution of health facilities by sector and facility type and urban/rural location



3.3 Facility Ownership and Funding

All hospitals owned the buildings in which they operated (Figure 3-6). Among health centers and clinics, 90 percent of those in the public sector were owned, compared to 100 percent of those in the private sector. Approximately one-third of the health units in Marib were housed in temporary locations, and 4 percent were leased.

Figure 3-6. Ownership of facilities, by facility type and sector

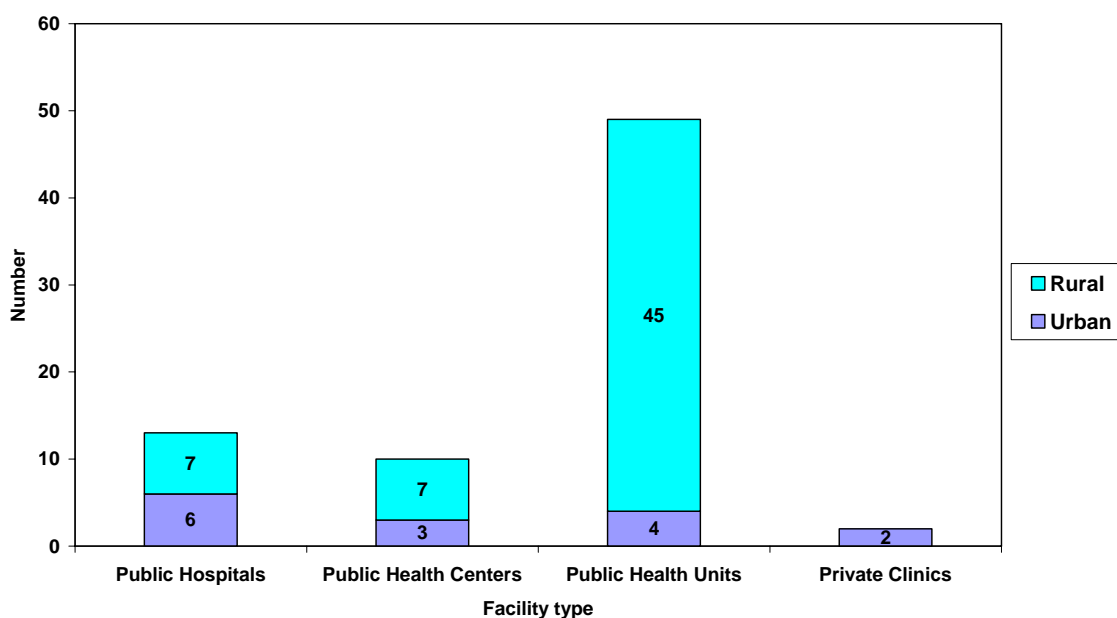
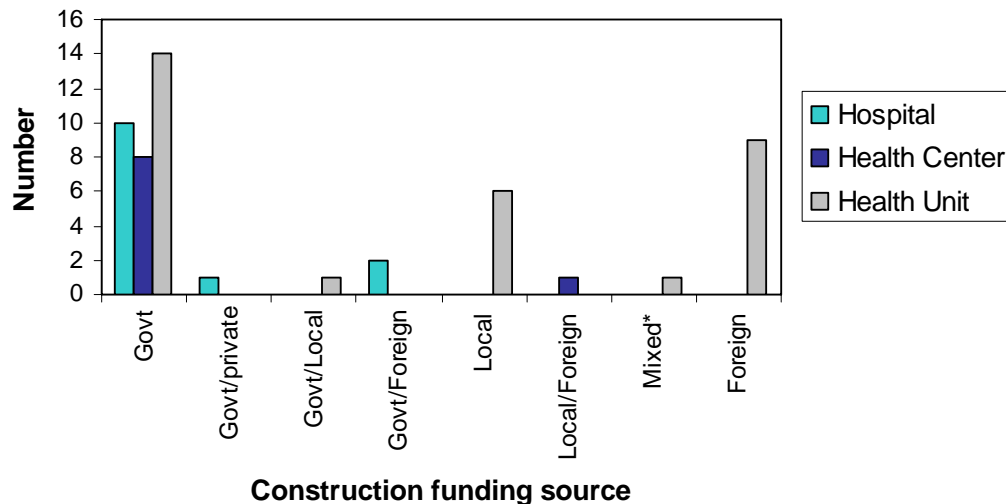


Figure 3-7 shows all sources of funding for the 53 public health facilities that reported owning their own buildings. The government was the primary source of construction funding for public hospitals and health units. Foreign aid and local funding were also common sources of construction funding for health units.

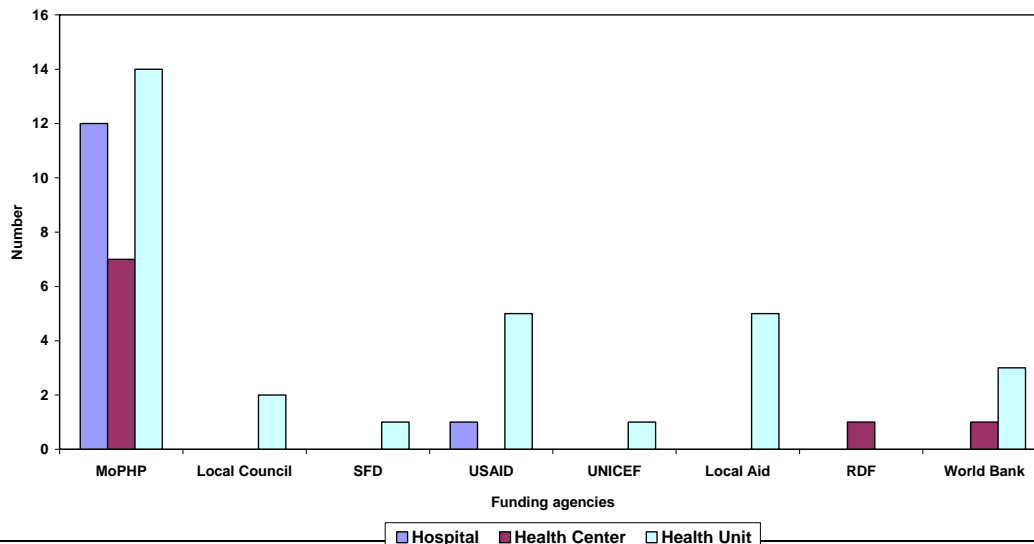
Figure 3-7. Primary construction funding sources of public facilities, by facility type



*Note: Mixed refers to combination of government and non-government sources

Figure 3-8 shows the primary funding agencies (i.e., funding agencies that paid for at least 50 percent of the construction costs) for the 53 public facilities that owned their own buildings. The MoPHP was the dominant source of funding for all public hospitals and health centers. The MoPHP also was the primary funding agency for 45 percent of health units, followed by local aid and USAID (16 percent each). The primary funding agency was unknown for 26 percent of the health centers and health units.

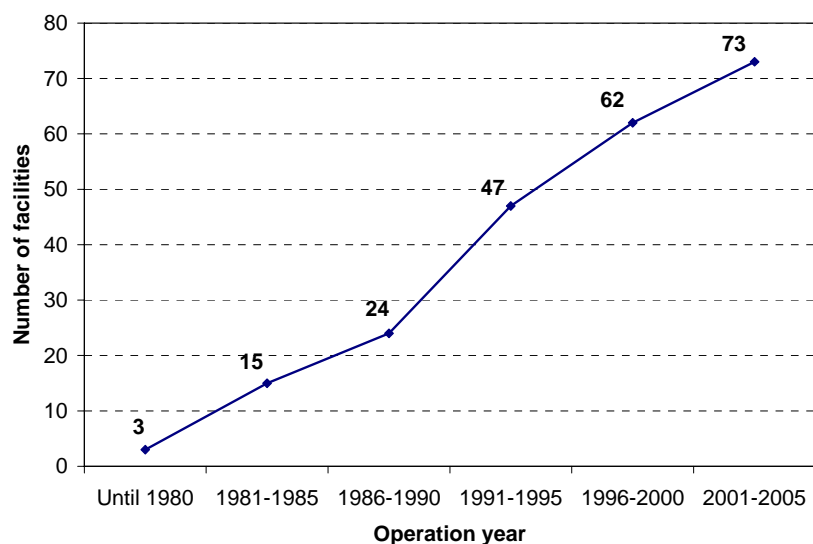
Figure 3-8. Primary funding agencies for public facilities



3.4 Time Trends

Figure 3-9 shows the cumulative number of facilities open during five-year periods from 1980 to 2005 (one facility with missing data was excluded). There has been a substantial proliferation of public facilities since 1991, with the largest proportion of the facilities surveyed opened during 1991-1995. The two private facilities opened in 1998 and 2003. Among the most recently opened facilities (2001-2005), 64 percent had just opened in 2003, and no new facilities opened in 2004 or 2005.

Figure 3-9. Cumulative number of facilities open from 1980 to 2005, Marib Governorate



The average number of daily working hours for outpatient departments is summarized in Table 3-2. Among all public facilities, the average number of working hours per day was 5.6 hours, compared to 8 hours for all private facilities.

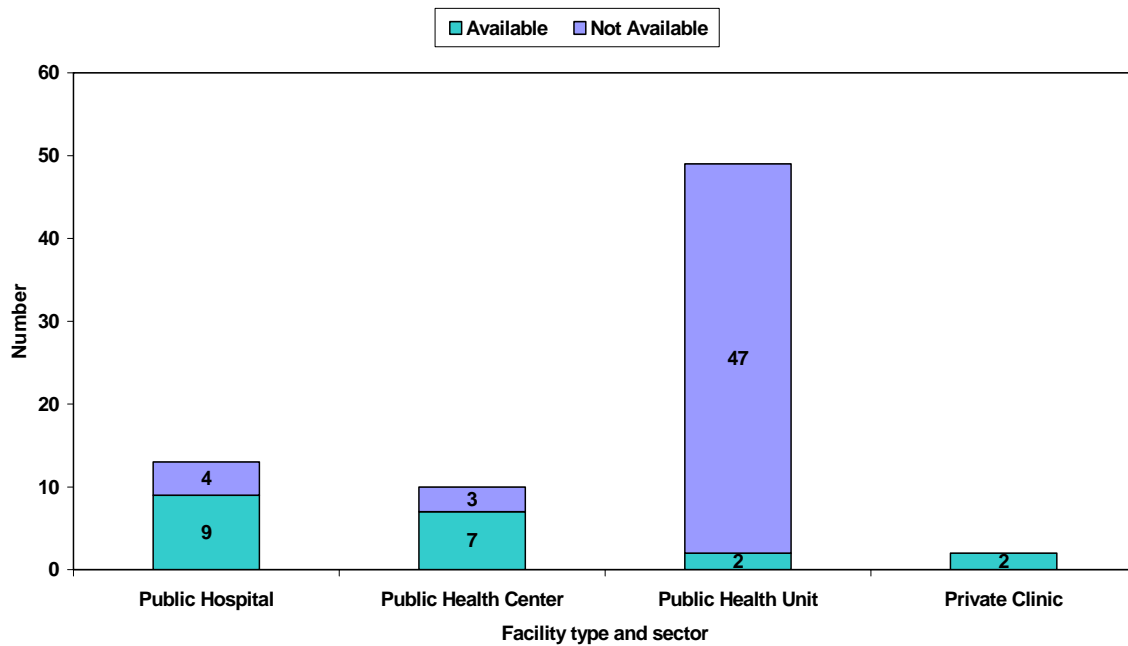
3.5 Working hours and accommodations

Table 3-2. Average number of daily working hours (outpatient sections)

Facility type	Public		Private		Total	
	n	mean \pm SD (min-max)	n	mean \pm SD (min-max)	n	mean \pm SD (min-max)
Hospital	13	6.0 \pm 1.2 (4-8)	0	0	13	6.0 \pm 1.2 (4-8)
Health clinic/Center	10	7.2 \pm 5.9 (4-24)	2	8.0 \pm 2.8 (6-10)	12	7.3 \pm 5.4 (4-24)
Health unit	49	5.2 \pm 1.1 (3-8)	0	0	49	5.2 \pm 1.1 (3-8)
Total	72	5.6 \pm 2.4 (3-24)	2	8.0 \pm 2.8 (6-10)	74	5.7 \pm 2.5 (3-24)

The availability of on-site accommodations for facility staff is important for attracting and retaining staff, particularly in remote areas. Figure 3-10 shows the number of facilities with accommodations available. Both of the private health clinics had accommodations available, as did most of the public hospitals and health centers (69 percent and 70 percent, respectively). As expected, the availability of accommodations at health units (4 percent) was quite low.

Figure 3-10. Availability of accommodations attached to health facilities, by facility type and sector



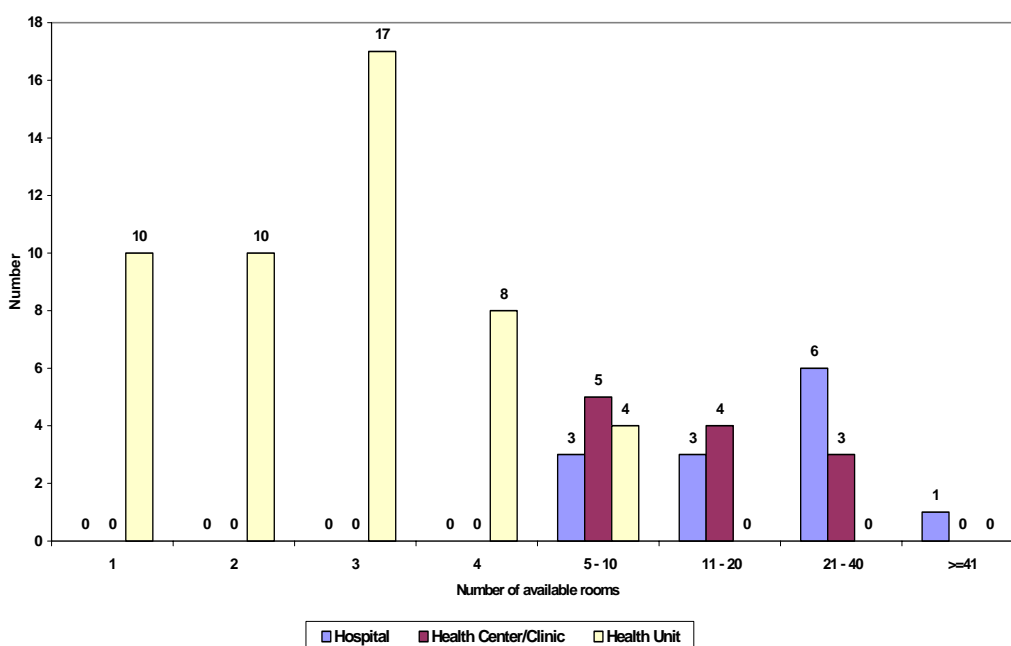
4. Facility Infrastructure

(See also tables C-4-1 through C-4-11 in Annex C)

4.1 Rooms

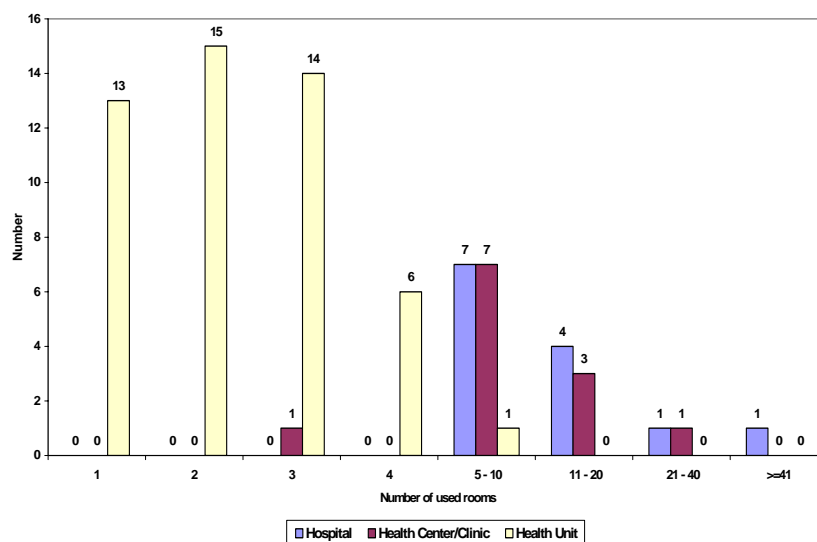
Figure 4-1 shows the number of total rooms available for each facility type. All hospitals had at least seven rooms. Most (75 percent) health centers and clinics had from five to 20 rooms, with the largest health clinic having 28 rooms. Virtually all health units (92 percent) had four or fewer rooms. The largest hospital in Marib, 26th September, had 195 rooms available.

Figure 4-1. Distribution of number of facility rooms available, by facility type



The number of rooms actually used to provide health services is presented in Figure 4-2. Just over half (57 percent) of the health units used one or two rooms to provide health services. Most (83 percent) health centers and clinics reported using from 5-20 rooms, and hospitals reported using from seven to 75 rooms. Of the seven hospitals that reported having 21 or more rooms available, only two actually used that many rooms.

Figure 4-2. Distribution of number of rooms used to provide health services, by facility type



4.2 Infrastructure

Large differences were found between public and private facilities with respect to the availability of basic infrastructure items such as clean water, electricity, ground telephone lines, toilets, and sewage systems, with both of the private facilities in the survey having each of these items compared to 76 percent or fewer of public facilities (Table 4-1). The difference was greatest for ground telephone lines, which were available for only 10 percent of the public facilities (five hospitals and two health centers).

Clean water was available in just 71 percent of the public facilities, ranging from 90 percent of health centers to 63 percent of health units. Two hospitals, Kara Rural Hospital and Al-Hosoun Rural Hospital, had no clean water available.

All public sector hospitals and health centers had toilets available, compared to just 65 percent of health units. Toilets were available in both of the private sector facilities in the survey. Sewage systems were in place in all of the public hospitals and health centers, and in just 29 percent of health units. Electricity was available in only 44 percent of all public health facilities, ranging from 27 percent of health units to 100 percent of hospitals; both private facilities had electricity.

See Annex C (Table C-4-1) for a district-level summary of facilities with various infrastructure items available. Maps showing the proportion of facilities in each district with clean water, electricity, usable toilets, and separation of medical waste and garbage are also located in Annex C (Figures C-4-1 through C-4-4).

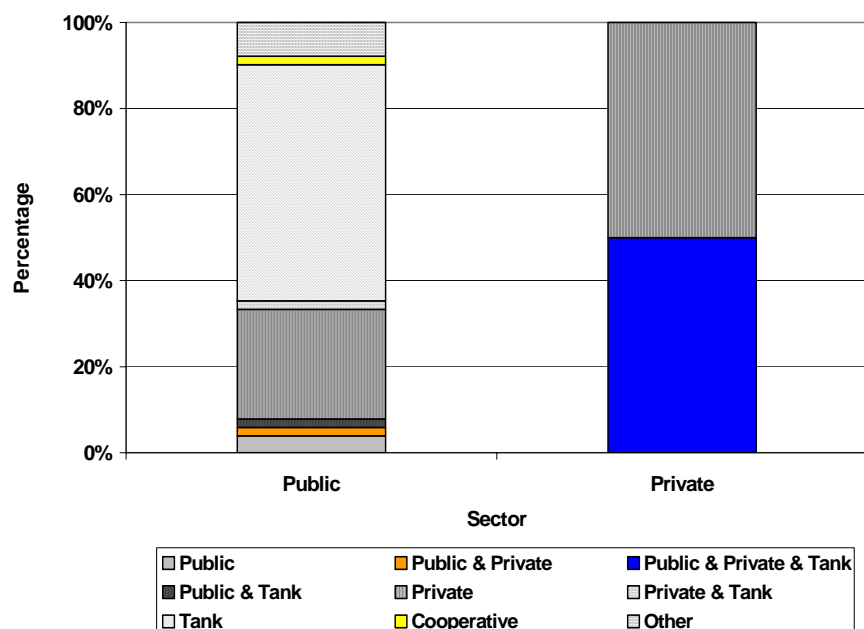
Table 4-1. Availability of clean water, electricity, ground telephone lines, toilets, sewage systems, and transportation in public and private sector facilities

	Sector									
	Public								Private	
	Hospital		Health Center		Health Unit		Total		Health Clinic	
	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)
Clean water										
Available	11	(84.6)	9	(90.0)	31	(63.3)	51	(70.8)	2	(100)
Not	2	(15.4)	1	(10.0)	18	(36.7)	21	(29.2)	0	(0.0)
Electricity										
Available	13	(100)	6	(60.0)	13	(26.5)	32	(44.4)	2	(100)
Not	0	(0.0)	4	(40.0)	36	(73.5)	40	(55.6)	0	(0.0)
Telephone lines										
Available	5	(38.5)	2	(20.0)	0	(0.0)	7	(9.7)	2	(100)
Not	8	(61.5)	8	(80.0)	49	(100)	65	(90.3)	0	(0.0)
Toilets										
Available	13	(100)	10	(100)	32	(65.3)	55	(76.4)	2	(100)
Not	0	(0.0)	0	(0.0)	17	(34.7)	17	(23.6)	0	(0.0)
Sewage system										
Available	13	(100)	10	(100)	29	(59.2)	52	(72.2)	2	(100)
Not	0	(0.0)	0	(0.0)	20	(40.8)	20	(27.8)	0	(0.0)
Transportation										
Available	1	(7.7)	0	(0.0)	0	(0.0)	1	(1.4)	1	(50.0)
Not	12	(92.3)	10	(100)	49	(100)	71	(98.6)	1	(50.0)
Total	13	(100)	10	(100)	49	(100)	72	(100)	2	(100)

4.2.1 Clean Water

Water tanks (55 percent) were the major source of clean water for public facilities, followed by private networks (26 percent). One of the two private facilities used a private network for clean water, and the other used a water tank as well as public and private networks (Figure 4-3).

Figure 4-3. Sources of clean water, by sector

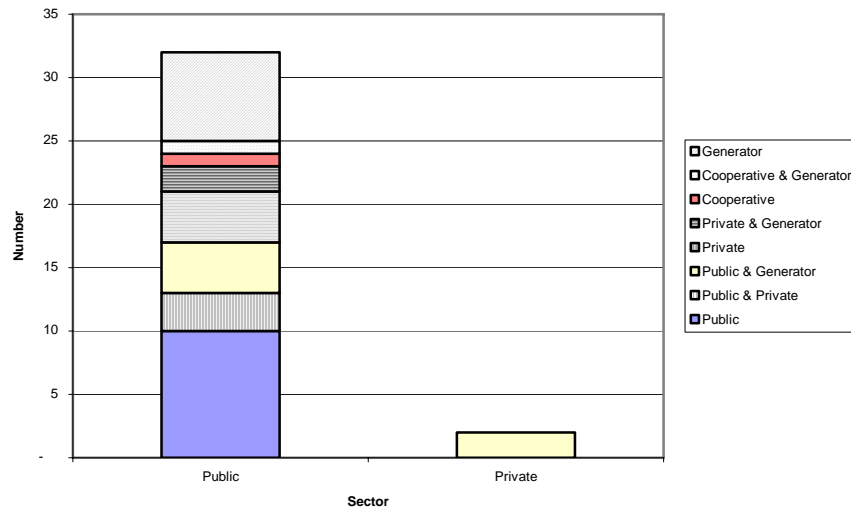


4.2.2 Electricity

A total of 34 facilities reported having electricity available. The two private facilities with electricity reported that their main sources were a combination of government and their own generators (Figure 4-4). The most common electricity source for public facilities was the government (31 percent), followed by their own generators (22 percent).

Among facilities with electricity, the average number of hours that electricity was available each day was higher for private facilities than for public facilities (24 hours vs. 10.4 hours, respectively). For public health center the average was 9.7 hours, while both private clinics reported 24-hour electricity availability.

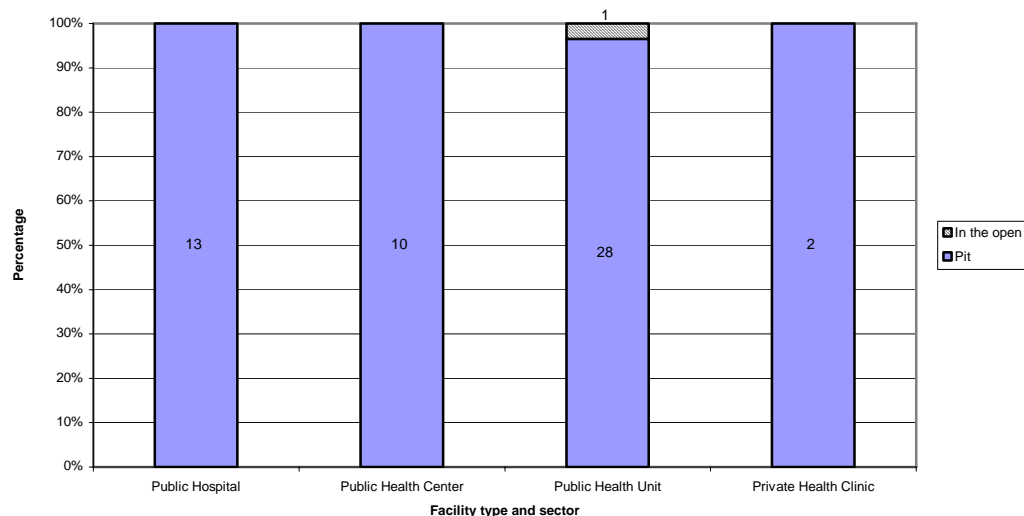
Figure 4-4. Sources of electricity, by sector



4.2.3 Sewage Systems

Of the 74 facilities surveyed, 54 (73 percent) had sewage systems available (72 percent of public facilities vs. 100 percent of private facilities). Of those with sewage systems available, all used pit systems, except for one public health unit that disposed of sewage in the open (Figure 4-5).

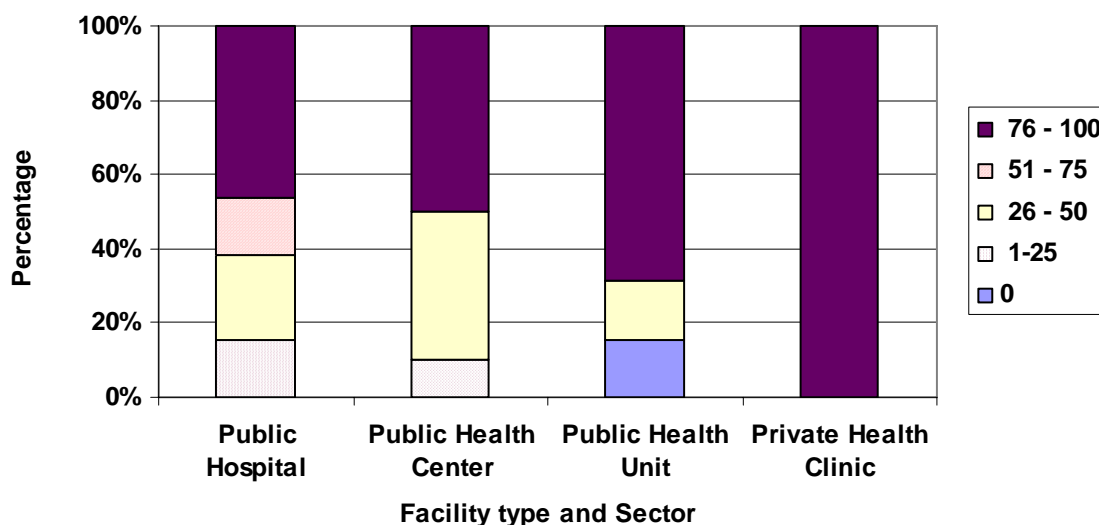
Figure 4-5. Types of sewage systems, by facility type and sector



4.2.4 Toilets

The proportion of available toilets that were actually usable was higher among private sector facilities than public sector facilities. Both private health clinics reported that all of their toilets were usable, while almost 40 percent of public sector facilities had fewer than three-quarters of their available toilets usable (Figure 4-6). Approximately one-fifth of the health units had no usable toilets.

Figure 4-6. Proportion of usable toilets, by facility type and sector



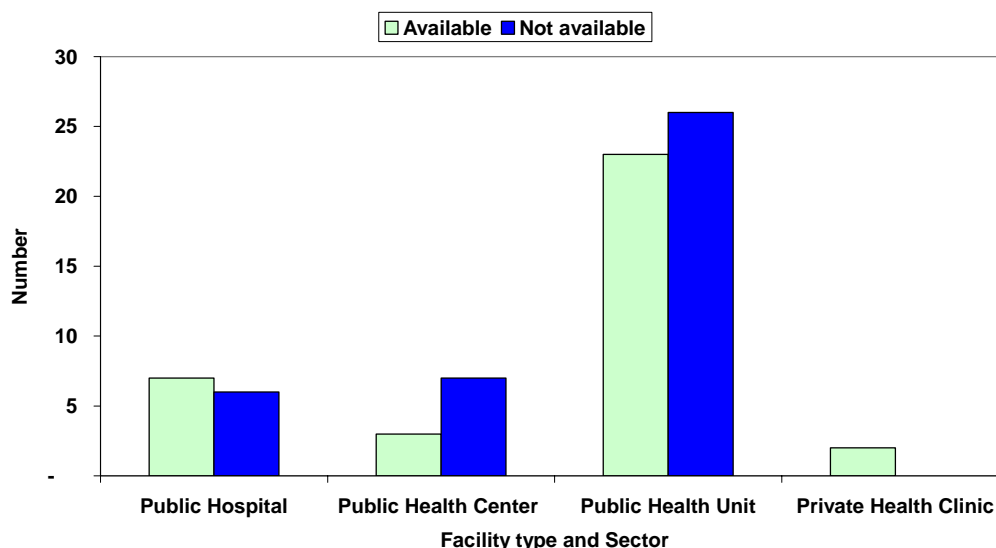
4.3 Transportation

Transportation availability was very low (3 percent overall) for both public and private facilities. Transport was available in one of the two private clinics and in just one of the 72 (1.4 percent) public facilities, a hospital. None of the public health centers or health units had their own transportation.

4.4 Medical Waste and Garbage Separation and Disposal

Just under half of the facilities in Marib had a means to separate medical waste from other garbage. Public facilities were less likely than private facilities to separate medical waste (46 percent vs. 100 percent, respectively). Of all health facility types, hospitals were most likely to separate medical waste (54 percent). Both of the private clinics separated medical waste, compared to just one-third of the public health centers. Almost half (47 percent) of the public health units separated medical waste (Figure 4-7).

Figure 4-7. Separation of medical waste and garbage, by facility type and sector



Among the 39 public facilities reporting that they did not separate medical waste and garbage, burning was the most common means of disposal (85 percent). Of the 35 facilities separating medical waste and garbage, most disposed of garbage by burning it (70 percent of public facilities and 50 percent of private facilities). The other private facility separating medical waste reported that it was disposed of in garbage barrels. Of note, eight health units reported that garbage was disposed of by throwing it in the street.

4.5 Equipment Sources

Among 72 public facilities with data on the main sources of equipment, the primary sources were the government and foreign aid (Table 4-2). Most (39 percent) hospitals reported that the government was the primary source of equipment. Approximately 60 percent of the health centers and 51 percent of health units reported that the main equipment source was the government, and about 30 percent of the hospitals and health centers reported that equipment was supplied by a combination of government and foreign sources. Foreign sources funded 29 percent of health units.

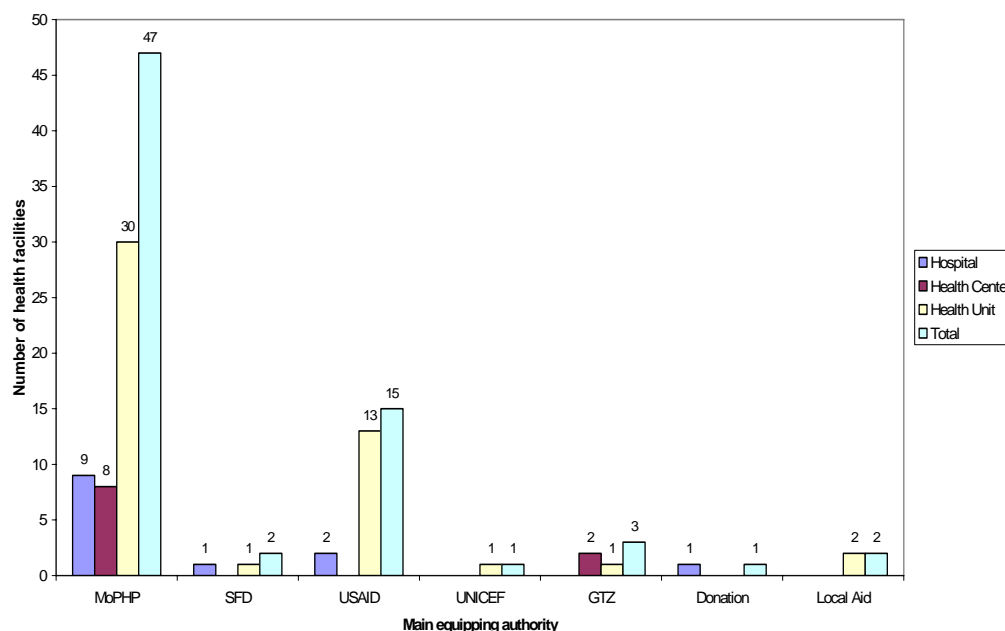
Table 4-2. Sources of equipping health facility building (public sector)

Equipment Source	Facility Type						Total	
	Hospital		Health Center		Health Unit			
	n	(%)	n	(%)	n	(%)	n	(%)
Government	5	(38.5)	6	(60.0)	25	(51.0)	36	(50.0)
Government & private	2	(15.4)	0	(0.0)	0	(0.0)	2	(2.8)
Government & local	0	(0.0)	1	(10.0)	1	(2.0)	2	(2.8)
Government & foreign	4	(30.8)	3	(30.0)	5	(10.2)	12	(16.7)
Local	0	(0.0)	0	(0.0)	2	(4.1)	2	(2.8)
Government & non-government*	1	(7.7)	0	(0.0)	1	(2.0)	2	(2.8)
Foreign	1	(7.7)	0	(0.0)	14	(28.6)	15	(20.8)
Unspecified	0	(0.0)	0	(0.0)	1	(2.0)	1	(1.4)
Total	13	(100)	10	(100)	49	(100)	72	(100)

*Combination of government and one or more of private, local, and/or foreign sources

As Figure 4-8 shows, the MoPHP was the primary source for equipping public sector health facilities (66 percent of all facilities). USAID was the next largest significant source in Marib, equipping 15 health facilities, two hospitals, and 13 health units.

Figure 4-8. Main authorities for equipping public sector health facility buildings



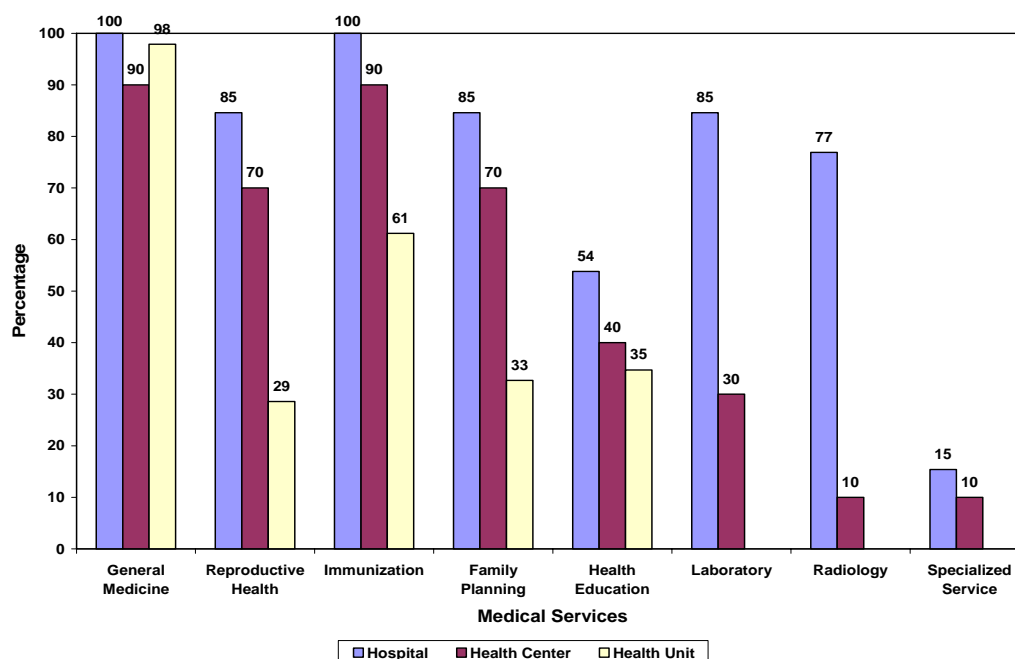
5. Health and Medical Services Provided

(See also Tables C-5-1 through C-5-5 in Annex C)

5.1 Medical Services Available – Public Sector

Figure 5.1 shows the number and proportion of public sector facilities providing at least one medical service related to general medicine, reproductive health, immunization, family planning, and health education, as well as laboratory, radiology, and other specialized services (for hospitals and health centers only). Virtually all (97 percent) of the 72 public sector facilities provided at least one general medicine service, and most (72 percent) provided at least one immunization service. Just half of the facilities offered family planning services. Hospitals were more likely than health centers and health units to offer each of the services, though most facilities of all types offered general medicine services. Health education was provided by 39 percent of all public facilities, and health education on immunization was the most common type of health education provided.

Figure 5-1. Proportion of public sector facilities providing health and medical services, by facility type



Additional details regarding the types of medical services provided in public facilities are provided in Annex C (Table C-5-1). At least one laboratory service was provided by most hospitals and health centers (85 percent vs. 71 percent, respectively). All facilities providing at least one laboratory service were able to do urine and stool laboratory testing and malaria. Radiology services

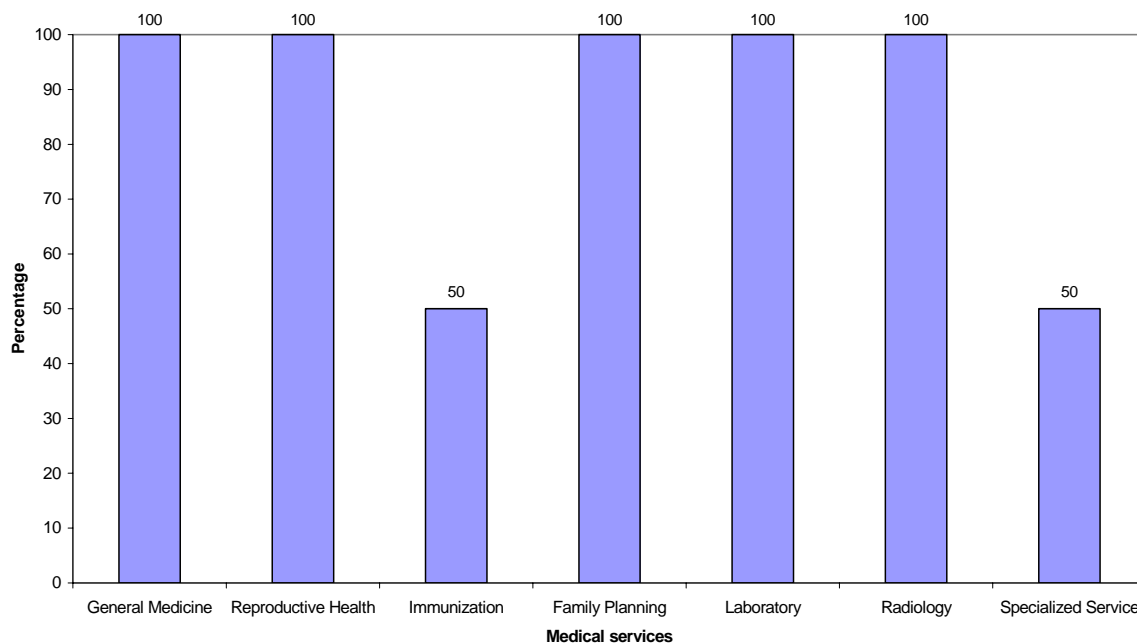
were provided by 10 (77 percent) hospitals and only one (10 percent) health center. Normal x-rays were only performed in the hospitals, while the one health center with radiology services only offered ultrasound. Just two of the 13 hospitals and one of the 10 health centers offered at least one specialized service such as internal medicine, surgery, obstetrics/gynecology, pediatrics, dental, and emergency.

Fewer than 25 percent of all public facilities offered intrauterine devices (IUDs) and tying of tubes for family planning, and health education on Acquired Immune Deficiency Syndrome (AIDS), sexually transmitted diseases (STDs), and female circumcision. In addition, no facilities offered Norplant, and none had laboratory capacity for testing tissues or doing cultures. No facilities provided echocardiograms, computed tomography (CT) scans, magnetic resonance imaging (MRI), or endoscopy. Dermatology, Ear, Nose and Throat (ENT), ophthalmology, and orthopedic services were not available at any facility in Marib.

5.2 Medical Services Available – Private Sector

Both private sector facilities, which were health clinics, provided the three main general medicine services and at least one reproductive health service (Figure 5-2). Both private facilities offered at least one laboratory service, and both had laboratory capacity for blood, urine, and stool testing as well as diagnostic capacity for malaria. In addition, both private facilities provided at least one radiology service and one provided several specialized services.

Figure 5-2. Availability of health and medical services in private sector health clinics



Both private clinics provided the full range of general medicine services including injections and wound dressing and at least one reproductive health and family planning service. The IUD, birth control pills, and injections were the most common forms of contraception offered. Health education services were not provided by either of the private facilities.

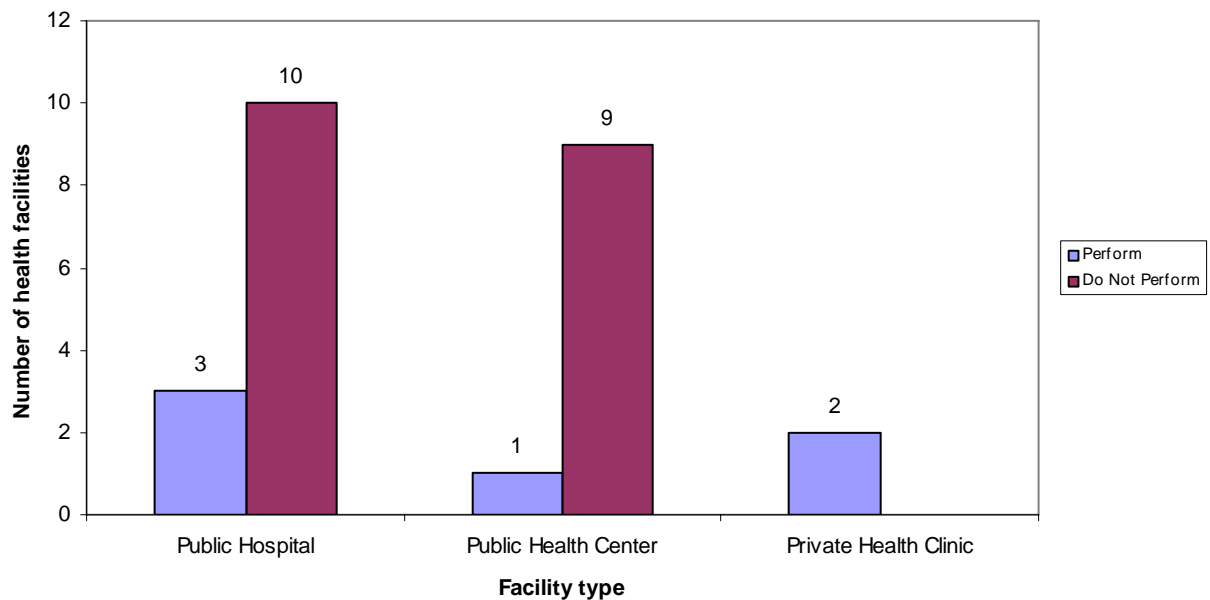
Both private facilities had laboratory services for urine, blood, and general blood testing, as well as malaria diagnostic testing. Neither of the private facilities provided echocardiograms, endoscopy, CT scans, or MRI.

Specialized services were provided by both private clinics and included everything except dermatology and orthopedics. One of the private health clinics also provided obstetrics and gynecologic services. For more details, see Annex C (Table C-5-2).

5.3 HIV testing

Public and private hospitals and health centers or clinics were asked whether they performed testing for human immunodeficiency virus (HIV). Of 25 total facilities, six (24 percent) performed HIV tests. Private facilities were more likely than public facilities to perform HIV tests (Figure 5-3). Of the facilities that did not perform HIV tests, none had referral systems for HIV tests to be done at other facilities.

Figure 5-3. Percentage of public hospitals and health centers/clinics performing HIV tests, by facility type and sector



6. Other Activities and Services

(See also Table C-6-1 in Annex C)

6.1 Control of Epidemic Diseases

In the 74 facilities with completed interviews, the proportion offering services for control of important epidemic diseases ranged from 1 percent for tuberculosis, bilharzia, and acute respiratory infections to 19 percent for malaria (Table 6-1). Hospitals were most likely to offer control services for malaria and bilharzia, while health units were most likely to offer control services for diarrhea, tuberculosis, and acute respiratory infections.

Table 6-1. Number and proportion of facilities offering services for control of epidemic diseases

Epidemic diseases	Hospitals (n=13)		Health Centers/ Clinics (n=12)		Health Units (n=49)		Total (n=74)	
	n	(%)	n	(%)	n	(%)	n	(%)
Malaria	7	(53.9)	1	(8.3)	6	(12.2)	14	(18.9)
Bilharzia	1	(7.7)	0	(0.0)	2	(4.1)	3	(1.4)
Diarrhea	1	(7.7)	1	(8.3)	3	(6.1)	5	(6.8)
TB	0	(0.0)	1	(8.3)	2	(4.1)	3	(1.4)
Acute respiratory infections	0	(0.0)	1	(8.3)	2	(4.1)	3	(1.4)

6.2 Delivery Emergencies

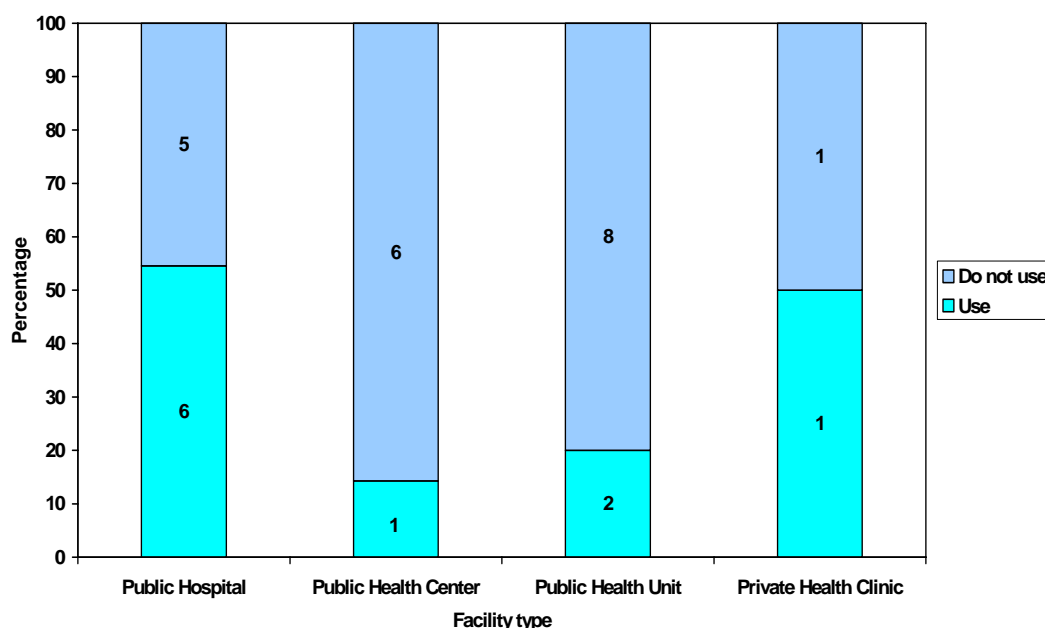
Among the 30 facilities in Marib that offered normal delivery services, two-thirds had a referral system for delivery emergencies (Table 6-2). Both of the private sector facilities offered normal delivery services and had a referral system in place, compared to just 64 percent of the 28 public facilities that performed deliveries. Among the public facilities providing normal delivery services, hospitals were most likely to have referral systems (82 percent), followed by health centers (71 percent) and health units (40 percent).

Table 6-2. Number and proportion of facilities offering normal delivery services with referral system for delivery emergencies available, by facility type and public/private sector

Facility Type	Public			Private			Total		
	n	Total	(%)	n	Total	(%)	n	Total	(%)
Hospital	9	11	(81.8)	0	0	(0)	9	11	(81.8)
Health center	5	7	(71.4)	2	2	(100)	7	9	(77.8)
Health unit	4	10	(40.0)				4	10	(40.0)
Total	18	28	(64.3)	2	2	(100)	20	30	(66.7)

In 2002, the Reproductive Health and Family Planning Department of the MoPHP issued Guidelines for Emergency Delivery Services to support doctors in dealing with issues related to emergency deliveries. The guide outlines complications that may occur during the pre-delivery, delivery, and postpartum stages, as well as during Caesarean sections. It also covers symptoms, prevention methods, and treatments for complications at each stage. The guide was used in 32 percent of the 28 public facilities that provided normal delivery services. Of these, hospitals were most likely to use the guide (55 percent), followed by health units (20 percent) and health centers (14 percent) (Figure 6-1). One of the two private facilities, a health clinic, used the guide. When questioned during the survey, some facilities reported that they had never received the guide.

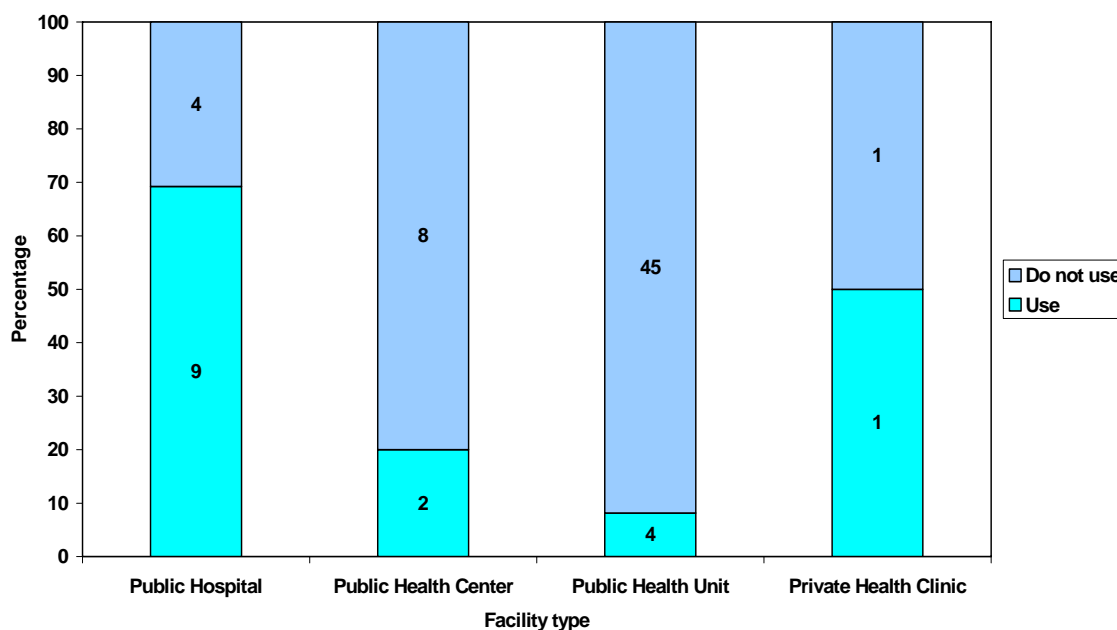
Figure 6-1. Public facilities using Guidelines for Emergency Delivery Services, by facility type



6.3 Guidelines for Infection Prevention in Safe Motherhood Services

The Reproductive Health and Family Planning Department in the MoPHP issued Guidelines for Infection Prevention in Safe Motherhood Services in July 2001. The guide focuses on instrument sterilization procedures and other infection prevention methods for health facilities. This guide was used by 15 (21 percent) of the public health facilities and one (50 percent) of the private health clinics (Figure 6-2). Among public facilities, approximately two-thirds of the hospitals, 20 percent of the health centers, and 8 percent of the health units used the guide.

Figure 6-2. Proportion of public facilities using Guidelines for Infection Prevention, by facility type and sector



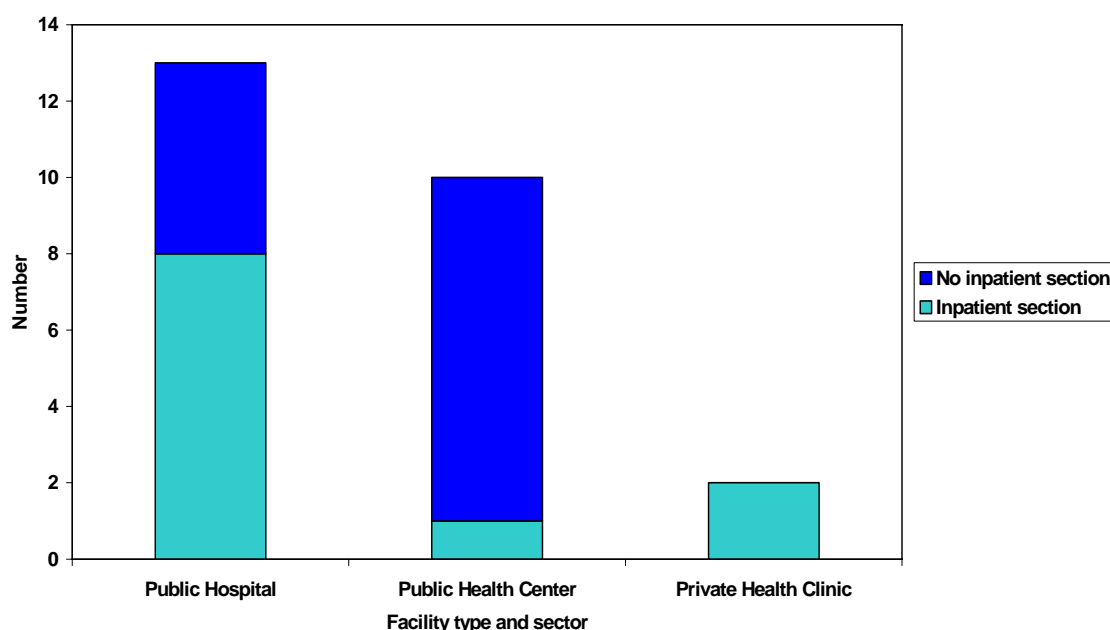
7. Inpatient Departments

(See also Tables C-7-1 through C-7-5 in Annex C)

7.1 Inpatient Departments

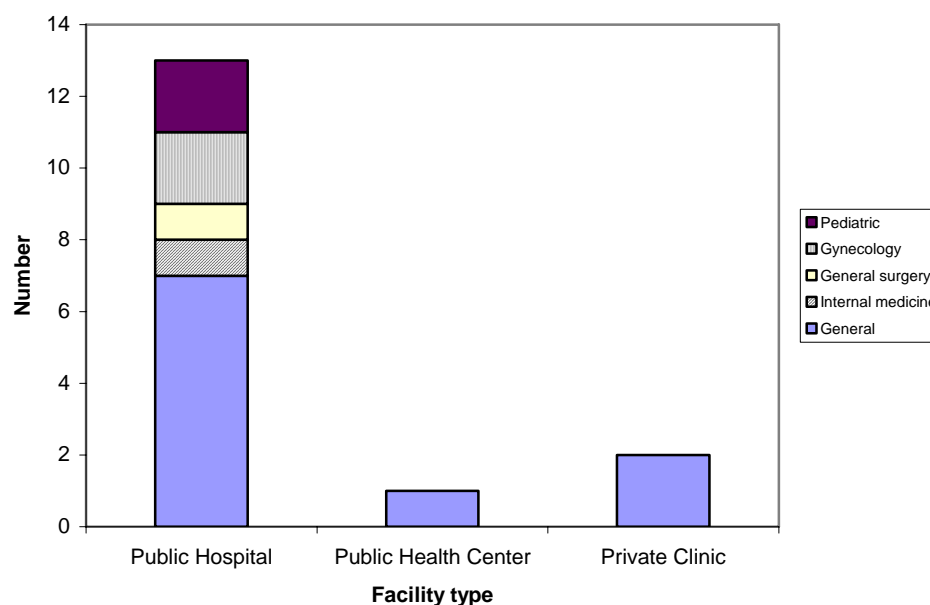
Eleven of the hospitals and health centers in Marib, including both of the private health clinics, had inpatient departments (or sections). This represented 62 percent of all 13 public hospitals and 10 percent of all public health centers (Figure 7-1).

Figure 7-1. Facilities with inpatient departments, by facility type and sector



Among the nine public facilities with inpatient departments, general inpatient departments were available in eight (89 percent), while general surgery, gynecology, and pediatric sections were available in approximately 25 percent (Figure 7-2). An internal medicine department was available in just one public hospital. Both of the private health clinics had inpatient departments, which were general inpatient departments. See Annex C (Table C-7-2) for the average number of inpatient beds by facility type and sector.

Figure 7-2. Types of inpatient departments available, by facility type and sector



7.2 Surgery

Among the 11 facilities with inpatient departments, surgeries were performed in just one public hospital and one private clinic (Table 7-1). Both facilities provided appendectomies, hernia operations, and Caesarean deliveries. Kidney stone, gall bladder removal, and urinary bladder stone operations were performed by one public hospital, and no facilities in Marib provided cataract surgeries.

Table 7-1. Proportion of facilities with inpatient departments performing specific operations

Sections	Public				Private			
	Hospital n=1		Total n=8		Clinic n=1		Total n=2	
	n	(%)	n	(%)	n	(%)	n	(%)
Appendectomy	1	(100)	1	(12.5)	1	(100)	1	(50.0)
Hernia	1	(100)	1	(12.5)	1	(100)	1	(50.0)
Gall bladder removal	1	(100)	1	(12.5)	0	(0.0)	0	(0.0)
Cataract	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Urinary bladder stones	1	(100)	1	(12.5)	0	(0.0)	0	(0.0)
Kidney stones	1	(0.0)	1	(12.5)	0	(0.0)	0	(0.0)
Caesarean delivery	1	(100)	1	(12.5)	1	(100)	1	(50.0)

Due to the small number of facilities providing operations in Marib, it was not possible to estimate the average cost of the different types of operations.

7.3 Rooms

All public and private sector facilities with inpatient departments offered common rooms for patients, though one health center did offer individual rooms (Table 7-2). One of the two private sector clinics offered individual rooms. Only one health facility in Marib, a private health clinic, offered intensive care rooms. See Table C-7-3 in Annex C for the average number of discharges during previous month for each inpatient department type (among facilities with inpatient departments) and Table C-7-4 for the average nightly costs (in Yemeni riyals) for inpatient rooms.

Table 7-2. Availability of different types of inpatient rooms among health facilities with inpatient departments

Rooms	Public						Private					
	Hospital n=8		Health Center n=1		Total n=9		Hospital n=0		Health Clinic n=2		Total n=2	
	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)
Individual	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	1	(50.0)	1	(50.0)
Common	8	(100)	1	(100)	9	(100)	0	(0.0)	2	(100)	2	(100)
Intensive care	0	(0.0)	0	(0.0)	0	(0.00)	0	(0.0)	1	(50.0)	1	(50.0)

8. Health Cadre

Table 8-1 summarizes the number of health staff in the 74 public and private sector facilities with completed interviews. A total of 770 health staff (728 in public facilities and 42 in private facilities) were categorized by cadre, gender, and whether they were local or foreign staff. Most (87 percent) health staff were males in both public and private facilities. Most of the female staff were either midwives (45 percent) or counselors (36 percent), though women only accounted for approximately one-third of all counselors. In private facilities, the four female staff were midwives (n=2), specialists (n=1), or nurses (n=1). The number of specialists was higher in the public facilities than in the private facilities (11 vs. 7, respectively), but specialists made up a proportionally larger share of health staff in private facilities. There were 19 foreign staff in public facilities and two in private facilities. Foreign staff accounted for 55 percent of all specialists in public facilities and just 14 percent of specialists in private facilities.

Table 8-1. Health staff, by cadre, gender, local/foreign and sector

Occupation / Profession		Public							Private						
		Local		Foreign		Total		Total	Local		Foreign		Total		Total
		M	F	M	F	M	F		M	F	M	F	M	F	
Specialist	#	5	0	4	2	9	2	11	5	1	1	0	6	1	7
	%	45.5	0.0	36.4	18.2	81.8	18.2	100	71.4	14.3	14.3	0.0	85.7	14.3	100
General practitioner	#	19	1	3	0	22	1	23	2	0	0	0	2	0	2
	%	82.6	4.3	13.0	0.0	95.7	4.3	100	100	0.0	0.0	0.0	100	0.0	100
Dentist	#	4	1	0	0	4	1	5	0	0	1	0	1	0	1
	%	80.0	20.0	0.0	0.0	80.0	20.0	100	0.0	0.0	100	0.0	100	0.0	100
Pharmacist	#	6	0	0	0	6	0	6	0	0	0	0	0	0	0
	%	100	0.0	0.0	0.0	100	0.0	100	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Laboratory (B.Sc.)	#	14	0	0	0	14	0	14	0	0	0	0	0	0	0
	%	100	0.0	0.0	0.0	100	0.0	100	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Medical assistant	#	35	1	3	0	38	1	39	2	0	0	0	2	0	2
	%	89.7	2.6	7.7	0.0	97.4	2.6	100	100	0.0	0.0	0.0	100	0.0	100
Nurses	#	106	4	5	0	111	4	115	9	1	0	0	9	1	10
	%	92.2	3.5	4.3	0.0	96.5	3.5	100	90.0	10.0	0.0	0.0	90.0	10.0	100
Midwives	#	0	44	0	1	0	45	45	0	2	0	0	0	2	2
	%	0.0	97.8	0.0	2.2	0.0	100	100	0.0	100	0.0	0.0	0.0	100	100
Medical technician	#	40	0	1	0	41	0	41	10	0	0	0	10	0	10
	%	97.6	0.0	2.4	0.0	100	0.0	100	100	0.0	0.0	0.0	100	0.0	100
Murshid/ Murshida (counselor)	#	83	36	0	0	83	36	119	0	0	0	0	0	0	0
	%	69.7	30.3	0.0	0.0	69.7	30.3	100	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Occupation / Profession		Public							Private						
		Local		Foreign		Total		Total	Local		Foreign		Total		Total
		M	F	M	F	M	F		M	F	M	F	M	F	
Administrative and other support staff	#	300	10	0	0	300	10	310	8	0	0	0	8	0	8
	%	96.8	3.2	0.0	0.0	96.8	3.2	100	100	0.0	0.0	0.0	100	0.0	100
Total	#	612	97	16	3	628	100	728	36	4	2	0	38	4	42
	%	84.1	13.3	2.2	0.4	86.3	13.7	100	85.7	9.5	4.8	0.0	90.5	9.5	100

9. Medical Equipment – Public Sector Facilities

9.1 General Medical Equipment

The 72 public health facilities that completed the survey were asked to provide information on the availability and quantity of key types of equipment. Results of this inventory are presented in Table 9-1. Facilities were asked to report the quantity available of each piece of equipment along with the quantity actually functioning or usable. Results are presented by facility type. Note that facilities were not asked to determine the number and proportion of functioning tongue depressors, desks, or chairs, for it was assumed that all of these items were functioning.

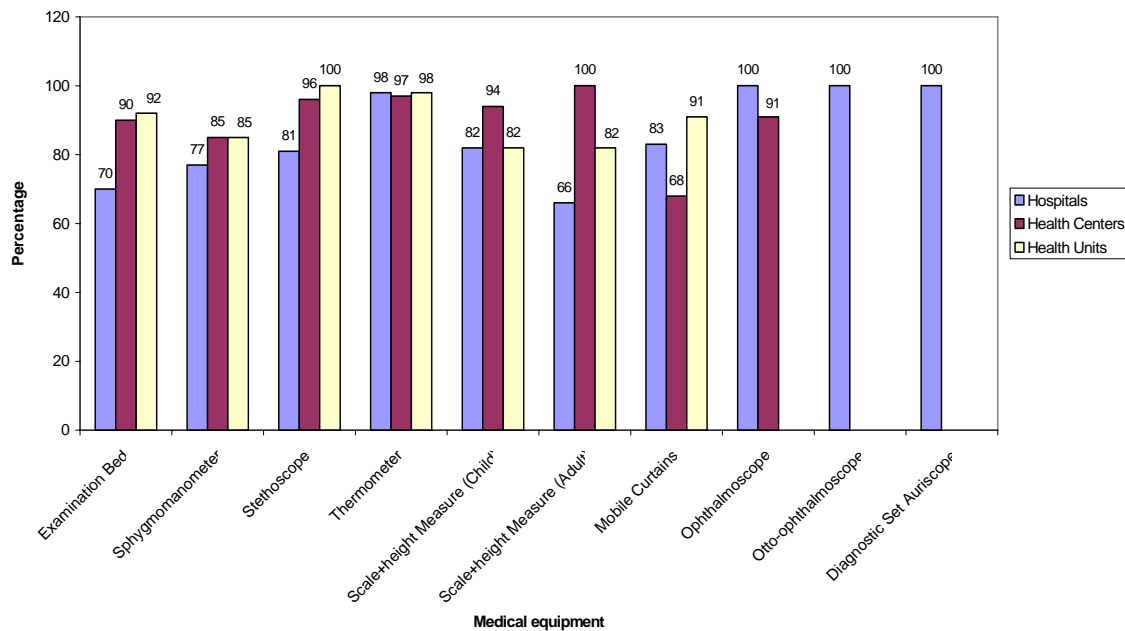
Table 9-1. General medical equipment in public health facilities: availability, quantity, and proportion functioning

Equipment Name	Hospital n = 13				Health Center n = 10				Health Unit n = 49			
	Available*	Quantity	Functioning (n)	Functioning (%)	Available*	Quantity	Functioning (n)	Functioning (%)	Available*	Quantity	Functioning (n)	Functioning (%)
Examination bed	13	46	32	(69.6)	9	29	26	(89.7)	44	60	55	(91.7)
Sphygmomanometer	13	56	43	(76.8)	10	27	23	(85.2)	36	46	39	(84.8)
Stethoscope	13	59	48	(81.4)	10	23	22	(95.7)	37	46	46	(100)
Thermometer	11	59	58	(98.3)	8	34	33	(97.1)	39	98	96	(98.0)
Tongue depressor	11	27	--	--	8	17	--	--	31	44	--	--
Scale + height measure - Child	13	28	23	(82.1)	10	17	16	(94.1)	37	38	31	(81.6)
Scale + height measure - Adult	13	29	19	(65.5)	9	12	12	(100)	34	38	31	(81.6)
Mobile curtains	12	54	45	(83.3)	7	19	13	(68.4)	21	32	29	(90.6)
Desk	13	50	--	--	10	24	--	--	41	48	--	--
Chairs	13	167	--	--	10	102	--	--	44	247	--	--
Ophthalmoscope	8	9	9	(100)	4	11	10	(90.9)	0	0	0	(0.0)
Otto-ophthalmoscope	2	2	2	(100)	0	0	0	(0.0)	0	0	0	(0.0)
Diagnostic set auriscope	4	4	4	(100)	0	0	0	(0.0)	0	0	0	(0.0)

*"Available" refers to the number of facilities with the equipment available.

All hospitals and health centers had examination beds, sphygmomanometers, stethoscopes, and scale and height measures for children, with most facilities reporting at least 70 percent of these pieces of equipment functioning (Figure 9-1). Just eight hospitals and four health centers had functioning ophthalmoscopes. Among health units, the most common types of equipment available were stethoscopes, thermometers, examination beds, and sphygmomanometers, and most of these items were reported as functioning. No health units had ophthalmoscopes or diagnostic auriscopes.

Figure 9-1. Proportion of functioning general medical equipment in public health facilities



9.2 Laboratory Equipment

In addition to general medical equipment, public health facilities were asked to inventory laboratory equipment; the results are presented in Table 9-2. The majority of the public hospitals had microscopes (92 percent), but only 63 percent of these were functioning (Figure 9-2). Most hospitals also had centrifuges, hemoglobinometers, and blood cell counters, and the proportion functioning ranged from 75 percent to 86 percent. Only seven hospitals had a refrigerator, and only six had sterilization machines and spectrophotometers. Just 86 percent of the sterilization machines were functioning.

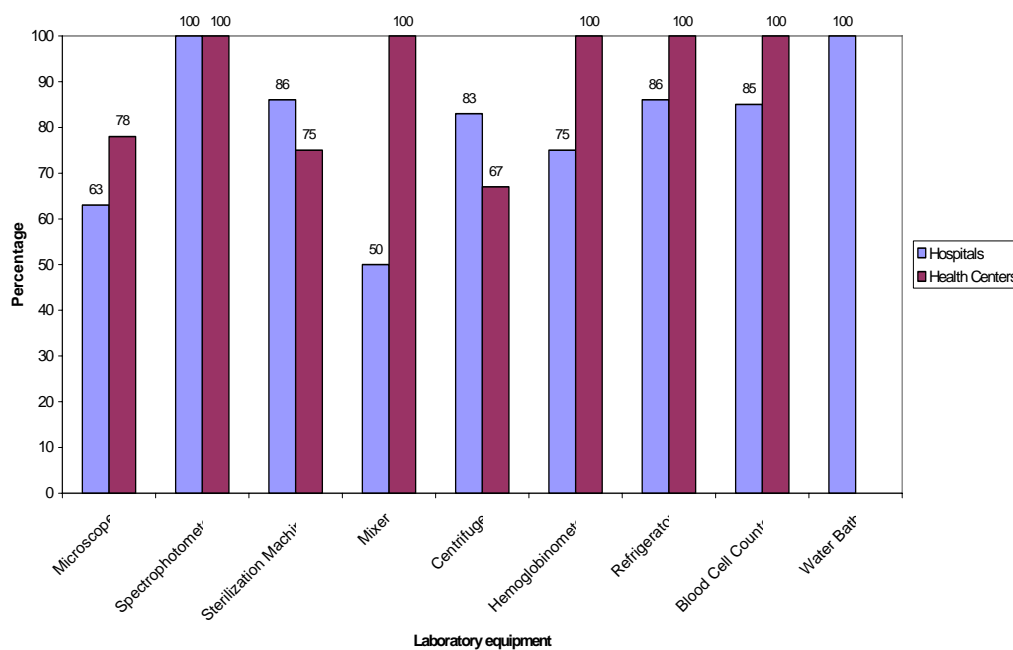
Microscopes were the most common type of laboratory equipment available in health centers (80 percent), followed by hemoglobinometers, sterilization machines, and blood cell counters. Most of this equipment was functioning. Refrigerators were present in just two health centers. Health units do not typically provide laboratory services, and no laboratory equipment was found in the inventory.

Table 9-2. General laboratory equipment in public health facilities: availability, quantity, and proportion functioning

Equipment Name	Hospital n = 13				Health Center n = 10			
	Available*	Quantity	Functioning (n)	Functioning (%)	Available*	Quantity	Functioning (n)	Functioning (%)
Microscope	12	16	10	(62.5)	8	9	7	(77.8)
Spectrophotometer	6	7	7	(100)	1	1	1	(100)
Sterilization machine	6	7	6	(85.7)	4	4	3	(75.0)
Mixer	4	4	2	(50.0)	1	1	1	(100)
Centrifuge	11	12	10	(83.3)	3	3	2	(66.7)
Hemoglobinometer	11	12	9	(75.0)	4	4	4	(100)
Refrigerator	7	7	6	(85.7)	2	2	2	(100)
Blood cell counter	12	13	11	(84.6)	4	4	4	(100)
Water bath	4	4	4	(100)	0	0	0	(0.0)

* "Available" refers to the number of facilities with the equipment available.

Figure 9-2. Proportion of functioning general laboratory equipment in public health facilities



9.3 Other Medical Equipment

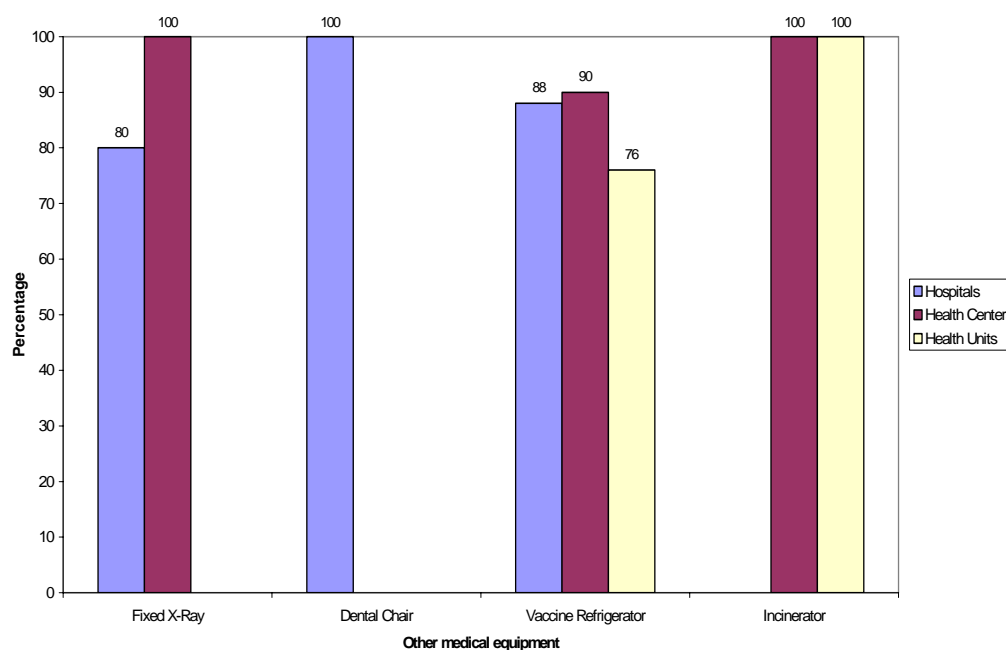
Table 9-3 and Figure 9-3 show the availability and functional status of other equipment available at public facilities in Marib. Vaccine refrigerators were available in all hospitals, health centers, and 80 percent of health units, though the functional proportion ranged from 76 percent in health units to 90 percent in health centers. Fixed x-ray machines were available in only five hospitals and 80 percent of these were functioning. Fixed x-ray machine availability was equally poor in the health centers, but all of the machines were functional. Incinerators were not available in any of the public hospitals and were found in just in one health center and two health units.

Table 9-3. Availability and functional status of other medical equipment in public health facilities

Equipment Name	Hospital n = 13				Health Center n = 10				Health Unit n = 49			
	Available*	Quantity	Functioning (n)	Functioning (%)	Available*	Quantity	Functioning (n)	Functioning (%)	Available*	Quantity	Functioning (n)	Functioning (%)
Fixed X-ray	5	5	4	(80.0)	4	4	4	(100)	0	0	0	(0.0)
Dental chair	1	1	1	(100)	1	1	0	(0.0)	0	0	0	(0.0)
Vaccine refrigerator	13	16	14	(87.5)	10	10	9	(90.0)	39	41	31	(75.6)
Incinerator	0	0	0	(0.0)	1	1	1	(100)	2	2	2	(100)

* "Available" refers to the number of facilities with the equipment available.

Figure 9-3. Proportion of functioning other medical equipment in public health facilities

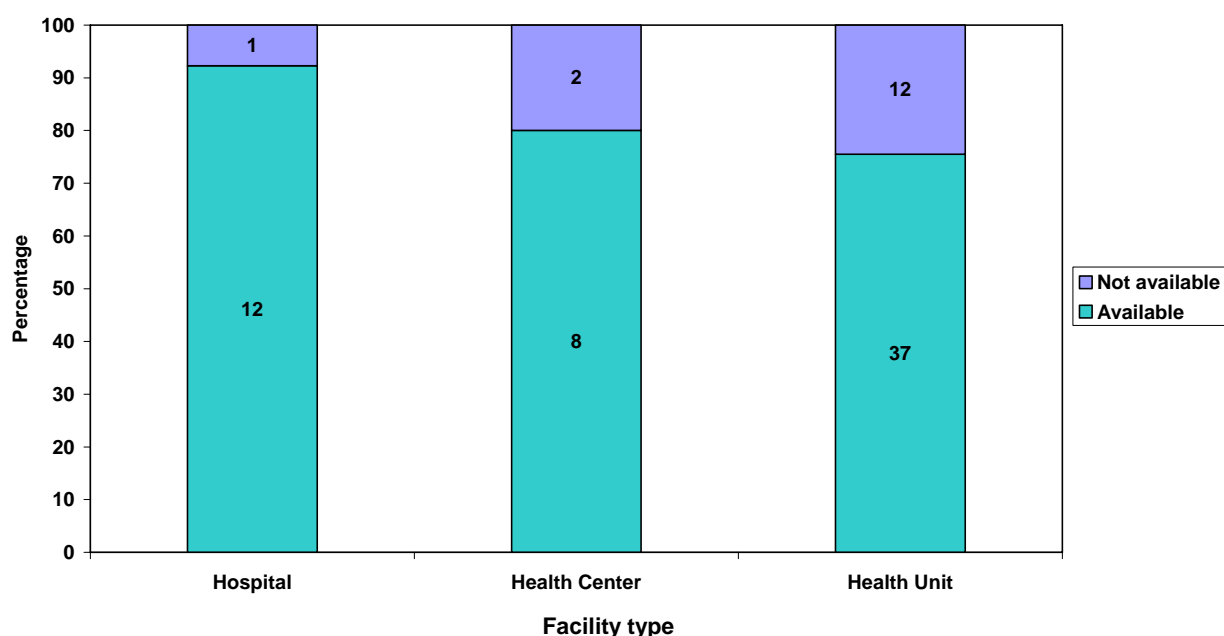


10. Drug Availability in Public Facilities

(See also Table C-10-1 in Annex C)

Among public sector facilities, 79 percent reported having any type of drugs available (Figure 10-1). This was highest among hospitals (92 percent) and health centers (80 percent). Just one of 12 hospitals reported that drugs were not available.

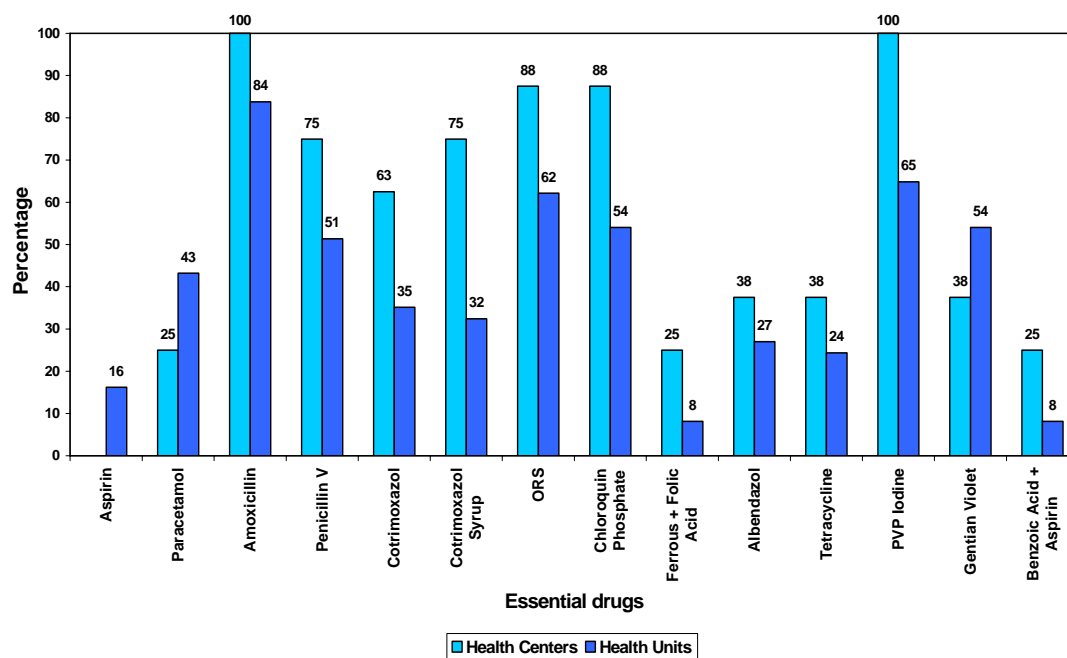
Figure 10-1. Availability of any type of drugs in public sector facilities, by facility type



Among the 57 facilities that reported availability of any drugs, the governorate was the primary source. This was true for all facility types but especially so for hospitals, with 92 percent of their drug supplies coming from the governorate, compared to 88 percent of health centers and 66 percent of health units. In addition, the MoPHP supplied drugs to one hospital. The districts were the source of drugs for one health center and 13 health units.

Of the 45 public sector health centers and health units reporting the availability of any types of drugs, the drugs available in most facilities were amoxicillin, PVP iodine, oral rehydration salts, chloroquine phosphate, penicillin V, and Cotrimoxazol syrup (Figure 10-2). The least available drugs were benzoic acid + aspirin, and ferrous + folic acid, with only approximately 10 percent of facilities having a supply of these drugs.

Figure 10-2. Proportion of public health centers and health units with essential drugs



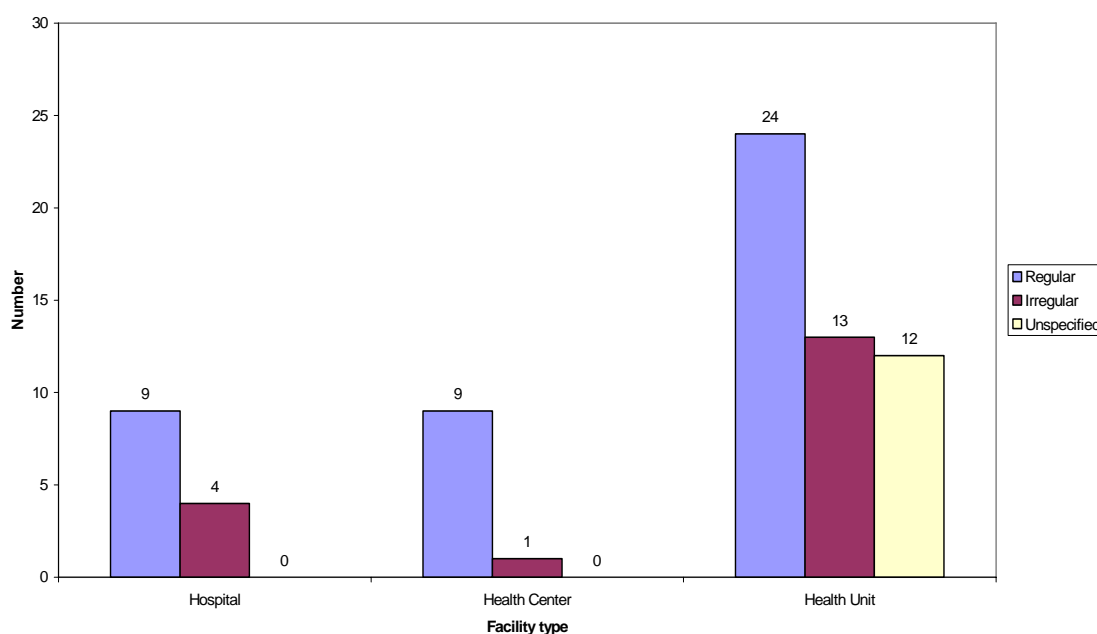
11. Financial Allocations (Public Sector)

(See also Tables C-11-1 and C-11-2 in Annex C)

In the public facilities in the survey, over two-thirds of the respondents knew their facility budgets. Facility budgets were more likely to be known by respondents from hospitals (92 percent), followed by health centers (90 percent) and health units (79 percent).

Just over half (58 percent) of the public facilities reported regular receipt of allocations to cover operational expenses during the previous year. Health centers were more likely to report regular delivery than hospitals (90 percent versus 69 percent, respectively) (Figure 11-1). Health units were least likely to report regular delivery of operating expenses.

Figure 11-1. Periodicity of delivering operational expenses in public facilities in the last year

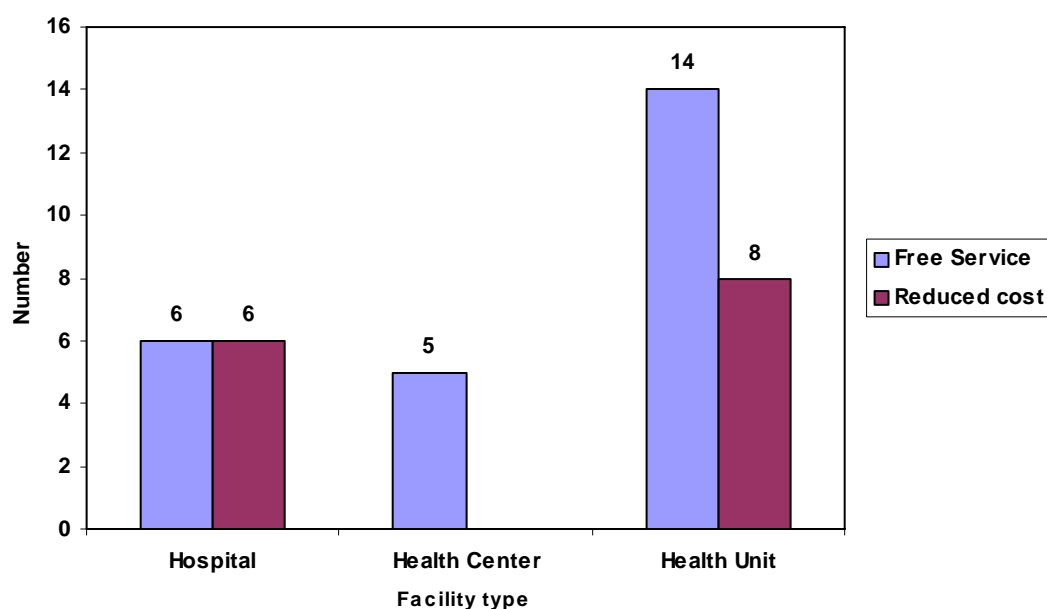


Most (54 percent) of the public facilities offered an exemption system for persons unable to pay. Exemptions were available in virtually all hospitals and in approximately half of the health centers and health units (Table 11-1). Of the facilities with exemption systems, the most common type was to offer completely free services to those unable to pay (63 percent), followed by reduced cost services (37 percent) (Figure 11-2).

Table 11-1. Number and proportion of public facilities with exemption systems for those unable to pay

Exemption system	Facility Type							
	Hospital		Health Center		Health Unit		Total	
	n	(%)	n	(%)	n	(%)	n	(%)
Available	12	(92.3)	5	(50.0)	22	(44.9)	39	(54.2)
Not available	1	(7.7)	5	(50.0)	27	(55.1)	33	(45.8)
Total	13	(100)	10	(100)	49	(100)	72	(100)

Figure 11-2. Types of exemptions available among public facilities with exemption systems in place



12. Conclusions and Next Steps

12.1 Conclusions

The keystone of evidence-based decision making is the availability of accurate and high-quality data for evaluation and planning. With the completion of the 2005 Yemen Health Facility Survey in Marib, data on facilities and services have been updated for the first time since 1998. The data in this report, supplemented by more refined or in-depth analyses, will be useful for a variety of stakeholders at all levels as they strive to improve access to and quality of care in the Governorate of Marib. The eventual compilation of these data with those from other governorates will provide the most accurate, complete, and current data for decision makers at the national level and will provide a solid base upon which to continue efforts to improve the health of the citizens of Marib as well as the rest of Yemen.

As with any survey of this nature, the results represent the health care infrastructure situation in Marib at a specific point in time. Facilities close and open, health staff shift positions and leave, equipment breaks down or is repaired, and availability of water and electricity may not be constant. While no dataset of this magnitude is completely perfect, every effort was made during the survey design and implementation to maximize accuracy and to provide the most up-to-date and complete inventory of the current situation in Marib. Mechanisms to update these data on a regular basis are planned and will ensure the continuing usefulness of the data over time. The production of the initial survey results and reports represents close and continued collaboration between a number of partners, led by the MoPHP and USAID/Yemen, and provides baseline data to serve as a stepping stone for more in-depth analyses as needed.

An important preliminary result of the Marib Health Facility Survey was the verification of the existence and operational status of all facilities in the initial inventory (dated 2003) provided by the governorate. The survey teams then identified an additional 22 facilities that did not appear on the initial list. These results demonstrate the importance of regularly updating official counts and inventory of resources to ensure an accurate picture of the governorate's health care system infrastructure and capacity.

The data from this survey should be evaluated keeping in mind limitations inherent to this type of undertaking. Time and resources were limited, and it was not always possible to survey the person with the most knowledge about the facility. Most (68 percent) of the respondents were either the health facility managers or deputy managers. However, survey respondents also included other staff such as nurses (14 percent), murshid/murshida (counselors) (4 percent), or administrators and medical assistants (5 percent). Re-visits were only possible for a small proportion of all facilities, and these were conducted primarily for verification of operational status as well as a random data verification check. Facility staff mobility, availability, and turnover meant that on these data verification visits, it was not always possible to re-interview the same staff member who had completed the initial interview, and this could lead to differing results. In addition, data on certain elements, such as costs of operations and inpatient rooms, were available for only a small proportion of facilities and may not be representative. However, the survey staff conducted numerous checks for internal consistency of the data and verified figures that appeared unusual, so the final data used for this report represent the

most accurate and up-to-date data available and provide a strong baseline for the governorate. Additional analyses or follow-up data collection can expand upon these initial findings.

The survey revealed several areas that suggest a positive trend in the capacity of Marib Governorate to meet the health care needs of its population. First, the rapid increase in the number of facilities in the past 10 years indicates an improvement in the average number of persons served per facility, a crude measure of accessibility. Basic services such as general medicine, immunization, reproductive health, and family planning were provided by most public facilities. Most of the public hospitals had at least some laboratory capacity, as did both private facilities. Eleven facilities (nine public and two private) had inpatient departments; of these, two facilities (one public and one private) had the capacity to perform different types of basic operations such as appendectomies, hernia repair, Caesarean deliveries, and gall bladder removal. Between the public and private facilities, there was at least one working member of each health cadre, though the total numbers of dentists, pharmacists, and laboratory technicians were relatively low. Female staff represented approximately 14 percent of all health staff in the governorate, and foreign staff accounted for over half of all specialists in public facilities. Finally, it is important to note that most public hospitals, as well as approximately half of the public health centers and health units, offered exemption systems (free or reduced services) for patients who could not otherwise afford to pay.

Despite these positive findings, the health facility survey demonstrated that there are still areas for improvement in Marib. A key concern is the reported lack of basic operating necessities such as clean water, toilets, and electricity in a substantial proportion of public facilities. This is particularly an issue for health units, which were least likely to have each of these items – just 63 percent had clean water, 27 percent had electricity, and 65 percent had toilets, and none of the health units had ground telephone lines. It is important to note that two hospitals reported no clean water source at the time of the survey, raising questions about their ability to provide basic services to their patients.

Another area requiring further analysis for planning purposes is a review of where functioning equipment is available and where it needs to be installed or replaced. The lack of sterilization machines in some hospitals, for example, may contribute to poor infection prevention and control, while the lack of refrigerators indicates inadequate capacity to store vaccines for basic immunization services. An assessment of the needs of specific facilities, using the health facility survey results as a starting point, could pinpoint the most urgent areas requiring attention and ensure that these facilities are provided with necessary equipment.

Finally, it should be noted that the health facility survey documented very low availability of certain essential drugs in health centers and health units – particularly aspirin, benzoic acid + aspirin, and ferrous + folic acid. To address the various factors related to this problem will require additional analysis, which should pinpoint issues related to pharmaceutical logistics and supply chains as well as stock management.

The data presented in this report provide a starting point for planning and decision making in Marib. Regular review and systematic updates, comparison of the data with other sources as they become available, and continued support for these activities will ensure that these data improve over time and become more and more useful for planning and monitoring and evaluation.

12.2 Next Steps

Ensuring adequate access of rural populations to health care is an important goal of health systems strengthening in Yemen. The MoPHP Health Facility Survey has generated up-to-date

information on the current conditions and services offered at Yemeni health facilities. Dissemination of survey results is an important next step towards empowering decision makers. Baseline data will need to be maintained and updated periodically to ensure continued value and uses of the facility data. This can be done through training of key governorate health office staff and by establishing procedures for retrieving new information, updates, and changes to health facility conditions and modifying the health facility database accordingly. By incorporating this information into a GIS, decision makers can have instant access to critical information and not only see where all facilities are located, but also focus on a subset of facilities that meet certain criteria (e.g., facilities that offer immunization services, or have an electricity source available to run equipment). This “filtering” approach helps decision makers better understand how localized populations are currently being served. All of these next steps are described in more detail below.

Workshops, Database Management, and Training

One of the most effective ways to disseminate technical information, such as the health facility survey results, is to hold a workshop to provide an opportunity for stakeholders to better understand the data and its implications and have the chance to have questions answered and issues resolved through open discussion. A workshop will be scheduled in the coming months for governorate and district health officials. In addition to discussing the survey results and implications, the workshop will be a forum to introduce stakeholders to specific analyses, tools, and techniques to maximize the use of the data.

Subsequent training and development of database management and maintenance will be provided. Regular updates, modifications, and revisions to the health facility database are necessary and critical. Procedures will be established to facilitate periodic reporting by facilities on changes in conditions (e.g., equipment, health cadre, infrastructure). The updated health facility database will be used to power tools, applications, and further analyses.

Health Facility Viewer

The survey data is being used in the health facility viewer as an informational tool that is available to users with no specific GIS knowledge. It provides a user-friendly interface for viewing the results of the MoPHP Health Facility Survey through map-based navigation (Figure 12-1). The survey gathered three types of information: the GPS coordinates of the facility, digital photographs of the building’s exterior and interior conditions, and information on the facility’s staff, conditions, available services, utilities, and financing.

Figure 12-1. Health facility viewer – sample district summary screen



The user can zoom into a district of interest, and then use the map to select a facility (hospital, health center, or health unit). This pulls up the survey information for that facility, including a 'photo viewer' that allows the user to flip through the set of facility photos gathered during the survey, as well as tables of information and statistics about the particular facility (Figure 12-2). At any time, the user can step back to select a different facility within the district, or view a new district.

Figure 12-2. Health facility viewer – sample facility screen



District and governorate health office officials are able to query and examine the conditions, status, and needs of all health facilities under their management. In the past, remote access to and inaccurate reports from health facilities have inhibited the ability of district and governorate health offices to plan and budget according to the specific needs of each facility. The health facility viewer provides a baseline assessment of each facility and provides evidence-based rationale for future facility-based health care service availability, equipment, staffing, and other decisions.

The health facility viewer is being developed as a standalone product that does not require users to have expensive GIS software on their own computers. It is being implemented in Flash and Hypertext Markup Language (HTML), so it is adaptable to the web, but can also be delivered on a CD-ROM and run locally on a desktop personal computer without internet access.

Health GIS Applications

As health data from surveys, government statistics, and donor projects are linked into the health GIS, an expanding set of customized health applications can be developed that utilize the best available demographics and the cleaned, georeferenced, and enhanced GIS base map data layers. These GIS tools are improving the capacity of MoPHP and governorate health office officials to visualize, understand, and make decisions more easily. Integration of these data into a relational database with a GIS interface facilitates efficient use of limited health care resources through encouraging data sharing and reducing duplication of effort among different Yemeni health-focused agencies and organizations.

GIS-driven applications are being developed for a variety of end users, including those with no specific GIS training. The aim is to bring the benefits of GIS to as wide an audience as possible. On the basic level, the GIS can provide map-based (“point and click”) access to view information about a particular feature, such as a district or facility, while more advanced users can employ spatial analysis techniques to answer questions related to their health-sector concerns.

For example, facility locations can be displayed along with the existing road network, the complexity of the terrain, and other geographic features that may assist or prohibit access to a particular location. *PHRplus* is currently developing a three-tiered approach to measure accessibility based on time-travel estimates to account for the unique needs of Yemen’s rural population, particularly those that live in mountainous terrain or outlying areas with minimal road networks. In Yemen’s rural areas, most people travel by foot; thus pedestrian access to health facilities is the first accessibility tier. The second accessibility tier is equal to the spatial extent to which health care workers based at a facility can reach the surrounding population, and the third accessibility tier is based on the reasonable travel time to the health facility using motorized transportation.

The travel time/distance measure capabilities of a GIS can assist decision makers in several ways. It can be used as an exploratory data analysis tool, answering questions such as, “What is the average distance to a facility from a populated area?” Or, if a policy is aiming to ensure that all villages have access to health care within a particular distance, the GIS can be used to select populations that currently fall outside of a pre-determined “suitable distance.” In this way, health care planners can quickly determine populated areas that should be targeted for new facility construction or mobile clinic visits.

Annex A: Survey Staff

PHR^{plus} Staff

Name	Position
Dr. Abdul Jabbar Ali Al Ghaithi	Survey manager
Abdulwahed Thabet	Technical advisor
Khalil Gobran	GIS expert
Abdulkader Nueman	Database expert
Abdul Salam Al Kohlani	Financial manager
Rila Al Domini	Technical assistant
Dalia Al Eryani	Technical assistant
Bilqis Al Rimi	Data entry
Mohamed Hani	Administrative support/Driver

MoPHP Staff (Central & Governorate levels)

Name	Position
Ezzadin Al Hamzi	Team leader
Abdul Majed Al Wada'i	Team leader
Adel Rabad	Team leader
Yahia Al Thobhani	Team leader
Abdullah Salem	Team leader
Jamal Al Sruri	Team leader
Ali Abdul Malik	Team leader
Adil Al Sama'i	Team leader
Walid Abdul Malik	Team leader
Abdul Karim Saleh	Team leader
Ali Mohammed Homisan	Surveyor
Hussein Al Hawani	Surveyor
Essa'a Hussein Al Abadi	Surveyor
Abdullah Blim	Surveyor
Ahmed Hussein Al Karda'ay	Surveyor
Nasserah Al Hadad	Surveyor
Ahmed Hussein Al Absi	Surveyor

Name	Position
Ahmed Ahmed Jehzah	Surveyor
Abdul Razak Al Thabty	Surveyor
Abdo Mohammed Nasher	Surveyor
Name	Position
Kalid Kolib	Revision department
Tareq Al Srori	Revision department
Hussain Monif	Revision department
Satiq Al Sama'ai	Revision department
Salim Al Rimi	Data processing
Balqis Abdullah	Data processing
Hussain Monif	Surveyor/data verification/field work
Mohsein Dawsan	Surveyor/data verification/field work
Salm Ail Salamh	Surveyor/data verification/field work

Annex B: Survey Instrument



REPUBLIC OF YEMEN

Ministry of Public Health and
Population

PLANNING AND DEVELOPMENT SECTOR

General Administration for Statistics and
Information Systems

Public and Private Health Facilities Survey

HEALTH FACILITIES QUESTIONNAIRE

No. of Questionnaire

		-			-			
--	--	---	--	--	---	--	--	--

Name of Governorate: _____

Name of District: _____

Name of Health Facility: _____

Health Facilities Questionnaire

Identification Data			Coding Categories
01	Serial number of health facility (record its no. inside box)	_ _ _ _ _	
02	Name of health facility: _____		
03	Name of Governorate: _____		
04	Name of District: _____		
05	Name of Ozlah: _____		
06	Name of City/Village: _____		
07	Type of Area	Urban	1
		Rural	2
08	Geographic Coordinates	N	_ _ _ . _ _ _ . _ _ _
		E	_ _ _ . _ _ _ . _ _ _
		Alt	_ _ _ _ _

Details of Employee giving the Data (Respondent)			
09	Full name of employee giving the data (Respondent): Record in writing	Name: _____	
010	Respondent Occupation? (Circle the appropriate number)	Health facility manager	1
		Health Facility Deputy manager	2
		Administrator	3
		Specialized doctor	4
		General practitioner	5
		Nurse	6
		Qualified midwife	7
		Other occupation (specify): _____	9
011	Telephone Number: () () ()		
012	Fax Number: () () ()		

General Data of Health Facility				
No.	Questions	Coding Categories		Go To...
013	Type of health facility	Hospital	1	
		Health center/clinic	2	
		Health unit	3	
		Other (specify): _____	9	
014	Owner health facility	Government	1	
		Private	2	
		Local Aid	3	
		Government/Private	4	
		Foreign Aid	5	
015	Ownership of the building?	Own	1	018
		Lease	2	
		On Loan	3	
		Other (specify)	9	
016	For the researcher: Don't ask 16,17 in private sector : What is the funding source for building the health facility? (multiple responses are permitted)	Government Funding	1	
		Private Funding	2	
		Local Donations	3	
		Government/Private Funding	4	
		Foreign Funding	5	
017	State the main funding authority for building the facility.	Name of authority: _____		
018	Is the building temporary or permanent?	Temporary	1	
		Permanent	2	
019	What year did the health facility start its operations?	Operating Year (Gregorian date)	___ __ ___ __	
020	What is the number of daily working hours at the health facility(outpatient)?	No. of hours.	___ __	
021	For the researcher: this is for Hospitals What is the number of daily shifts per month?	No. of days	___ __	
022	Is there accommodation attached to the health facility?	Yes	1	
		No	2	

Infrastructure of Facility				
No.	Questions	Coding Categories		Go To...
023	What is the number of rooms in the health facility building? (record by number)	Total number of rooms	___ _ _	
024	What is the number of rooms used in the health facility building to provide services? (record by number)	Number of rooms used	___ _ _	
025	Are there toilets in the health facility?	Yes	1	028
		No	2	
026	What is the number of toilets at the health facility building?	Number of toilets	___ _	
027	What is the number of toilets that are suitable for use? (record by number)	Number of suitable toilets	___ _	
028	Are there any sources of clean water at the health facility?	Yes	1	030
		No	2	
029	What are the sources of clean water at the health facility building? (multiple responses are permitted)	Public network	1	
		Private network	2	
		Well owned by health facility	3	
		Water tank	4	
		Other (specify)	9	
030	Is there electricity in the health facility?	Yes	1	033
		No	2	
031	What are the sources of electricity at the building of the health facility?(multiple responses permitted)	Public network	1	
		Private network	2	
		Cooperative network	3	
		Generator owned by the facility	4	
032	What is the number of daily operating hours for electricity at the health facility building? (record by number)	No. of hours	___ _	
033	Are there any ground telephone lines fixed in the health facility?	Yes	1	035
		No	2	

034	What is the number of ground telephone lines used in the health facility?	No. of used lines	_____	
035	Are there any means of transportation available at the health facility?	Yes	1	037
		No	2	
036	In case of Yes, what is the number of vehicles owned by the facility?	No. of transportation vehicles used	_____	
		No. of vehicles used for transporting employees	_____	
		No. of ambulances used	_____	
		Other	_____	
		Total No. of vehicles	_____	
037	For the researcher: Don't ask 37,38 at private sector What is the source of equipping the health facility building? (Multiple responses allowed)	Government Funding	1	
		Private Funding	2	
		Local Donations	3	
		Government/Private Funding	4	
		Foreign Funding	5	
038	State the main authority for equipping the health facility building	Name of authority: _____	_____	

Waste and Sewage System				
No.	Questions	Coding Categories		Go To...
039	Are there means of waste disposal at the health facility?	Yes	1	041
		No	2	
040	What means of sewage system is used at the health facility building?	Public network	1	
		Pit	2	
		In the open	3	
		Other (specify)	9	
041	Are there ways of separating medical waste from garbage?	Yes	1	043
		No	2	

No.	Questions	Coding Categories		Go To...
042	How is garbage disposed of at the health facility?	Garbage barrels (collected by municipality)	1	
		Burned	2	
		Buried within the fence of the facility	3	
		Buried outside the fence of the facility	4	
		Thrown in the street	5	
		Other (specify)	9	
043	How is medical waste disposed of at the health facility?	Garbage barrels (collected by municipality)	1	
		Medical incinerator	2	
		Burned in open area	3	
		Burned and buried within the fence of the facility	4	
		Burned and buried outside the fence of the facility	5	
		Thrown in the street	6	
		Other (specify)	9	

Health and Medical Services Provided by the Health Facility:

(1) = Circle 1 or 2 showing the availability or unavailability of the service at this facility.

(2) = Circle 1 or 2 showing the availability or unavailability of records at this facility.

(3) = Please record the number of frequent visits to the service during the last month.

(4) = Record service fee

	Service Type		(1)		(2)		(3)	(4)	
			Available Yes	No	Record Yes	No	Number of beneficiaries last month	Service cost for beneficiary	
044	General Medicine		1	2					
	1	General Medicine	1	2	1	2			
	2	Injections	1	2	1	2			
	3	Wound Dressing	1	2	1	2			
045	Reproductive Health		1	2					
	If Yes:-	1	Antenatal Care	1	2	1	2		
		2	Normal Delivery	1	2	1	2		
		3	postnatal Care	1	2	1	2		
		4	Child Growth Monitoring	1	2	1	2		
046	Immunization		1	2					
	If Yes:-	1	Immun. of women of reproductive age (second dose)	1	2	1	2		
		2	Immun. of pregnant women (2 nd dose)	1	2	1	2		
		3	Tuberculosis	1	2	1	2		
		4	Polio + DPT (3rd dose)	1	2	1	2		
		5	Measles	1	2	1	2		
		6	Hepatitis B (3rd dose)	1	2	1	2		
047	Family Planning		1	2					
	If Yes:-	1	Pill	1	2	1	2		
		2	Condom	1	2	1	2		
		3	IUD – the loop	1	2	1	2		
		4	Injection	1	2	1	2		
		5	Norplant	1	2	1	2		
		6	Tuba- ligation	1	2	1	2		
048	Health Education		1	2			No.of sessions in last 3 months		
	If Yes:-	1	Immunization	1	2				
		2	Nutrition	1	2				
		3	Education on AIDs	1	2				
		4	Education on STDs	1	2				
		5	Family Planning	1	2				
		6	Antenatal Care	1	2				
		7	Natural Breastfeeding	1	2				
		8	Female Circumcision	1	2				

Health and Medical Services (Continued)

	Service Type		(1)		(2)		(3)	(4)
			Available		Record		Number of beneficiaries last month	Service cost for beneficiary
			Yes	No	Yes	No		
049	Laboratory		1	2				
	If Yes:-	1 Urine	1	2	1	2		
		2 Stool	1	2	1	2		
		3 General Blood	1	2	1	2		
		4 Blood Chemistry	1	2	1	2		
		5 Tissues	1	2	1	2		
		6 Culture	1	2	1	2		
		7 Hormones	1	2	1	2		
		8 Malaria	1	2	1	2		
		9 Bilharzia	1	2	1	2		
050	Radiology		1	2				
	If Yes:-	1 Normal X-Ray	1	2	1	2		
		2 X-Ray with contrast	1	2	1	2		
		3 Ultrasound	1	2	1	2		
		4 Echocardiogram	1	2	1	2		
		5 CT Scan	1	2	1	2		
		6 MRI	1	2	1	2		
		7 Endoscopy	1	2	1	2		
051	Specialized Services		1	2				
	If Yes:-	1 Internal	1	2	1	2		
		2 Obstetrics / Gynecology	1	2	1	2		
		3 Pediatrics	1	2	1	2		
		4 Dermatology	1	2	1	2		
		5 ENT	1	2	1	2		
		6 Ophthalmology	1	2	1	2		
		7 Surgery	1	2	1	2		
		8 Orthopedics	1	2	1	2		
		9 Dental	1	2	1	2		
		10 Emergency	1	2	1	2		

Control of Epidemic Diseases								
	Type of Service	Control available		No. of female participants last year	Type of Control			
		Yes	No		Spraying	Filling Up	Field Treatment	Awareness
052	Malaria	1	2		1	2	3	4
053	Bilharzias	1	2		1	2	3	4
054	Diarrhea	1	2				3	4
055	Tuberculosis	1	2					4
056	Acute Respiratory Infections	1	2					4

Inpatient Sections							
No.	Questions	Coding Categories				Go To ...	
057	Are there inpatient sections at the health facility?	Yes	1				
		No	2		061		
058	What are the inpatient sections available at the facility? What is the no.of beds and the total number of admissions, discharges, and death cases in each section during the last month?						
	Type of Section	Availability		No.of beds	No.of admissions and discharges during last month		No. of mortalities during last month
		Yes	No		Admission	Release	
	General	1	2	_____	_____	_____	_____
	Internal medicine	1	2	_____	_____	_____	_____
	General surgery	1	2	_____	_____	_____	_____
	Gynecology	1	2	_____	_____	_____	_____
	Pediatric	1	2	_____	_____	_____	_____
	Orthopedics	1	2	_____	_____	_____	_____
	Eye surgery	1	2	_____	_____	_____	_____
	ENT	1	2	_____	_____	_____	_____
	Urology	1	2	_____	_____	_____	_____
	Psychological /neurological	1	2	_____	_____	_____	_____
	Dermatology	1	2	_____	_____	_____	_____
	Other (specify)	1	2	_____	_____	_____	_____

059	Does the facility carry out the following operations?		Available Service		Cost of Operation
			Yes	No	
If the answer is Yes:	1	Appendectomy	1	2	
	2	Hernia	1	2	
	3	Removal of gall bladder	1	2	
	4	Cataract	1	2	
	5	Urinary bladder stones	1	2	
	6	Kidney stones	1	2	
	7	Cesarean delivery	1	2	
060	How much does each type of room cost?				Cost for one night
	1	Individual Room	1	2	
	2	Common Room	1	2	
	3	Intensive Care	1	2	

No.	Questions	Coding Categories		Go To...
061	Does the facility test for HIV?	Yes	1	065
		No	2	
062	What is the number of cases that were tested during last year? (record by number)	No. of cases tested	— — —	
063	Did the facility register positive cases out of the tested cases?	Yes	1	065
		No	2	
064	If the answer is yes, what is the number of cases registered last year?	No. of registered cases	— — —	
065	Does the facility have a referral system for testing HIV at another health facility?	Yes	1	
		No	2	
066	For the researcher: Refer to the answer of question 45-2. If the answer was yes answer this question, if not go to 069. Does the facility have a referral system for delivery emergencies?	Yes	1	068
		No	2	
067	How many referrals occurred last month?	No. of referrals	— — —	
068	Is the emergency delivery guide used in delivery emergencies?	Yes	1	
		No	2	
069	Is the infection prevention and treatment guide used?	Yes	1	
		No	2	

Widespread Diseases and Problems:

070	<p>Mention more than five diseases that are spreading in the locality, and the most important three diseases related to children, women, and men.</p> <p>The diseases are determined by placing a tick in the appropriate square.</p>	Problems	Five most important diseases	The most important three diseases relating to:		
				Children	Women	Men
		1. Malaria				
		2. Bilharzias				
		3. Diarrhea				
		4. Tuberculosis				
		5. Acute Resp. Infections				
		6. Malnutrition				
		7. Complications of preg. and postpartum problems				
		8. Accidents and injuries				
		9. Hepatitis				
		10. AIDS				
11. Leprosy						

Health Cadre

071 What is the number of health workers at the facility?											
No.	Categories	Yemenis				Volunteers		Foreigners		Total	
		Permanent		Contracted		M	F	M	F	M	F
		M	F	M	F						
1	Specialists										
2	General practitioner										
3	Dentist										
4	Medical Assistant										
5	BSc Pharmacist										
6	Pharmacy technician										
7	BSc Laboratory										
8	Lab technician										
9	BSc Radiology										
10	X-ray technician										
11	Anesthesia technician										
12	Physiotherapy Technician										
13	Qualified Nurse										
14	Experienced Nurse										
15	Community Midwife										
16	Nurse Midwife										
17	Diploma midwife										
18	Midwife supervisor										
19	Murshid /Murshida (counselors)										
20	Public health										
21	Technicians/Assistants										
22	Administrators										
23	Asst. laborers										
24	Other										

Medical Equipment

Functionality Status:

1 = Functioning Well

2 = Partially Functioning and needs maintenance

3 = Out of Order and needs maintenance

4 = Out of order and cannot be maintained

	Equipment Name	Available		Quantity	Functional Status			
		Yes	No		1	2	3	4
072	Medical Examination Room Equipment							
1	Examination Bed	1	2					
2	Sphygmomanometer	1	2					
3	Stethoscope	1	2					
4	Thermometer	1	2					
5	Tongue Depressor	1	2					
6	Scale+ height Measure (children)	1	2					
7	Scale+ height Measure (adults)	1	2					
8	Mobile Curtains	1	2					
9	Desk	1	2					
10	Chairs	1	2					
11	Otto-Ophthalmoscope	1	2					
12	Ophthalmoscope	1	2					
13	Diagnostic Set Auriscope	1	2					
073	Delivery Room Equipment							
1	Gynecological Labor Bed	1	2					
2	Fetoscope	1	2					
3	Delivery Set	1	2					
4	Oxygen Cylinder	1	2					
5	Vaginal Speculum	1	2					
6	Vacuum	1	2					
7	Suction Machine	1	2					
8	Sterilization Machine	1	2					
9	Lamp							
074	Pharmacy Equipment							
1	Air-condition	1	2					
2	Fans	1	2					
3	Refrigerator	1	2					
4	Cupboard	1	2					
5	Shelves	1	2					
6	Chairs	1	2					
7	Desk	1	2					

Medical Equipment (Continued)

	Equipment Name	Available		Quantity	Functional Status			
		Yes	No		1	2	3	4
075	Laboratory							
1	Microscope	1	2					
2	Spectrophotometer	1	2					
3	Sterilization Machine	1	2					
4	Mixer	1	2					
5	Centrifuge	1	2					
6	Hemoglobin	1	2					
7	Refrigerator	1	2					
8	Blood Cell Counter	1	2					
9	Water Bath	1	2					
076	Radiology Equipment							
1	Fixed X-ray	1	2					
2	Mobile X-ray	1	2					
3	Ultrasound	1	2					
4	CT Scan	1	2					
5	Echocardiogram	1	2					
6	ECG	1	2					
7	Endoscope	1	2					
8	Dark room	1	2					
	Dental Equipment			077				
1	Dental Chair	1	2					
2	Dental set	1	2					
3	Dental X-ray	1	2					
4	Sterilization Machine	1	2					
078	Drug Storage							
1	Air-condition	1	2					
2	Fans	1	2					
3	Refrigerator	1	2					
4	Cupboard	1	2					
5	Shelves	1	2					
6	Chairs	1	2					
7	Desk	1	2					
079	Inpatient Sections							
1	Hospital bed + mattress	1	2					
2	Mobile Curtain	1	2					
3	Speculum Machine	1	2					
4	Trolley Stretcher For Patient	1	2					
5	Oxygen Cylinder	1	2					
6	Thermometer	1	2					
7	Sphygmomanometer	1	2					
8	Stethoscope	1	2					

Medical Equipment (Continued)

	Equipment Name	Available		Quantity	Functional Status			
		Yes	No		1	2	3	4
080	Operating Room							
1	Operating Bed	1	2					
2	Anesthesia Machine	1	2					
3	Small Surgical Set	1	2					
4	Large Surgical Set	1	2					
5	Cauterization	1	2					
6	Patient Monitor	1	2					
7	Defibrillator	1	2					
8	Fixed Lamp	1	2					
9	Mobile Lamp	1	2					
10	Boiling Sterilizer	1	2					
11	Steam Autoclave	1	2					
12	Hot air Sterilizer	1	2					
081	Other Equipment							
1	Generator	1	2					
2	Emergency Generator	1	2					
3	Vaccine Refrigerator	1	2					
4	Washing Machine	1	2					
5	Kitchen	1	2					
6	Incinerator	1	2					

(Don't be directed to Private sector)

Medicine Available at the Health Facility:			
No.	Questions	Coding Categories	Go To ...
082	Are there any types of medicines available at the health facility?	Yes	1
		No	2
083	What is the source of medicine to the health facility?	Governorate	1
		District	2
		Ministry	3
		Private	4
		Other (specify)	9
084	What is the period for delivering medicine to the health facility?	Monthly	1
		Every three months	2
		Every six months	3
		Yearly	4
		Irregularly	5

(This question should only be directed to government health units and centers)

085	Which of the following medicines are available at the health facility?			
Serial	Name of medicine	Form of medicine	Availability	
			Yes	No
1	Aspirin	Tab	1	2
2	Paracetamol	Tab	1	2
3	Amoxicillin	Syrup	1	2
4	Penicillin V	Syrup	1	2
5	Cotrimoxazol	Tab	1	2
6	Cotrimoxazol	Syrup	1	2
7	ORS	Powder	1	2
8	Chloroquin Phosphate	Tab	1	2
9	Ferrous + Folic Acid	Tab	1	2
10	Albendazol	Tab	1	2
11	Tetracycline	Eye ointment	1	2
12	PVP Iodine	Solution	1	2
13	Gentian Violet	Solution	1	2
14	Benzoic Acid + Aspirin	Ointment	1	2

(Don't be directed to Private sector)

Financial Allocations				
No.	Questions	Coding Categories		Go To ...
086	Do you know the financial allocations for the health facility?	Yes	1	
		No	2	
087	Have the allocations for operating expenses been delivered for last year?	Yes	1	089
		No	2	
088	Is the operating budget delivered regularly or irregularly?	Regularly	1	
		Irregularly	2	
089	Is there support in the operating budget by donors?	Yes (If yes, in what amount)	— — — — —	
		No	2	
090	Is there a system of exemption for the poor?	Yes	1	092
		No	2	
091	What is the type of these exemptions?	Total free service	1	
		Reduction in cost of service	2	
		Provision of in kind service	3	

For the Researcher:				
No.	Questions		Coding Categories	Go To ...
092	Result of the interview.	Fulfilled	1	
		Partially fulfilled	2	
		Temporarily closed	3	
		Completely closed	4	
		Rejected	5	
		Under construction	6	
		Other (specify)	9	
093	The facility was stated in the list	Yes	1	
		No	2	
094	Note: Are there any wash basins in the examination and wound treatment rooms?	Yes	1	
		No	2	
095	Note: Observe the standard of cleanliness inside the health facility.	Good	1	
		Average	2	
		Poor	3	
096	Note: Observe the standard of cleanliness outside the health facility.	Good	1	
		Average	2	
		Poor	3	
097	Note: Is there a fence around the facility?	Yes	1	
		No	2	
098	Write the number of photograph	From	— — —	
		To	— — —	
	Obtain the employee affairs form			

Remarks of the Researcher

Employee Data:

	Researcher	Team Leader	References	Coding	Data entry
Name					
Signature					
Date					

Annex C: Supplemental Data Tables

Table C-3-1. Number of health facilities completing survey, by district, facility type, and sector

District	Public				Private		
	Hospitals	Health Center	Health Units	Total	Hospitals	Health Clinics	Total
Al Abdiyah	1	0	3	4	0	0	0
Al Jubah	2	1	4	7	0	0	0
Bidbadah	0	1	3	4	0	0	0
Harib	1	0	9	10	0	0	0
Harib Al Qaramish	0	1	2	3	0	0	0
Jabal Murad	1	2	5	8	0	0	0
Mahliyah	0	1	2	3	0	2	0
Majzar	0	1	2	3	0	0	0
Marib	1	0	3	4	0	0	0
Marib City	4	0	9	13	0	0	0
Medghal	1	0	0	1	0	0	0
Raghwan	0	1	0	1	0	0	0
Rahabah	0	1	5	6	0	0	0
Sirwah	2	1	2	5	0	0	0
Total	13	10	49	72	0	2	2

Table C-3-2. Positions of survey respondents, by sector

Respondent position	Public		Private		Total	
	n	(%)	n	(%)	n	(%)
Manager	40	(55.6)	1	(50.0)	41	(55.4)
Deputy manager	9	(12.5)	0	(0.0)	9	(12.3)
Administrator	4	(5.6)	0	(0.0)	4	(5.4)
Nurse	10	(13.9)	0	(0.0)	10	(13.5)
Murshid/Murshid	3	(4.2)	0	(0.0)	3	(4.0)
Medical assist	4	(5.6)	0	(0.0)	4	(5.4)
Lab technician	1	(1.4)	0	(0.0)	1	(1.4)
District health office manager	1	(1.4)	0	(0.0)	1	(1.4)
Other	0	(0.0)	1	(50.0)	1	(1.4)
Total	72	(100)	2	(100)	74	(100)

Table C-3-3. Distribution of health facilities by sector, facility type and urban/rural

Facility Type	Public						Private					
	Urban		Rural		Total		Urban		Rural		Total	
	n	(%)	n	(%)	N	(%)	n	(%)	n	(%)	n	(%)
Hospital	6	(46.2)	7	(53.8)	13	(100)	0	(0.0)	0	(0.0)	0	(100)
Health center/Clinic	3	(30.0)	7	(70.0)	10	(100)	2	(100)	0	(0.0)	2	(100)
Health unit	4	(8.2)	45	(91.8)	49	(100)	--	--	--	--	--	--
Total	13	(18.1)	59	(81.9)	72	(100)	2	(100)	0	(0.0)	2	(100)

Table C-3-4. Ownership/leasing of facilities, by facility type and sector

Facility Type	Public								Private					
	Own		Lease		Temp		Total		Own		Lease		Total	
	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)
Hospital	13	(100)	0	(0.0)	0	(0.0)	13	(100)	0	(0.0)	0	(0.0)	0	(0.0)
Health center/Clinic	9	(90.0)	1	(10.0)	0	(0.0)	10	(100)	2	(100)	0	(0.0)	2	(100)
Health unit	31	(63.3)	2	(4.1)	16	(32.7)	49	(100)	--	--	--	--	--	--
Total	53	(73.6)	3	(4.2)	16	(22.2)	72	(100)	2	(100)	0	(0.0)	2	(100)

Table C-3-5. Distribution of building types, by facility type and sector

Facility Type	Public						Private					
	Fixed		Temp		Total		Fixed		Temp		Total	
	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)
Hospital	13	(100)	0	(0)	13	(100)	0	(0.0)	0	(0)	0	(0.0)
Health center/Clinic	9	(90.0)	1	(10.0)	10	(100)	2	(100)	0	(0.0)	2	(100)
Health unit	28	(57.1)	21	(42.9)	48	(100)	--	--	--	--	--	--
Total	50	(69.4)	22	(30.6)	72	(100)	2	(100)	0	(0.0)	2	(100)

Table C-3-6. Funding sources of public health facilities, by facility type

Construction funding source	Hospital		Health Center		Health Unit		Total	
	n	(%)	n	(%)	n	(%)	n	(%)
Government	10	(76.9)	8	(88.9)	14	(45.1)	32	(60.4)
Government/private	1	(7.7)	0	(0.0)	0	(0.0)	1	(1.9)
Government/local	0	(0.0)	0	(0.0)	1	(3.2)	1	(1.9)
Government/foreign	2	(15.4)	0	(0.0)	0	(0.0)	2	(3.7)
Local	0	(0.0)	0	(0.0)	6	(19.4)	6	(11.3)
Local/foreign	0	(0.0)	1	(11.1)	0	(0.0)	1	(1.9)
Mixed*	0	(0.0)	0	(0.0)	1	(3.2)	1	(1.9)
Foreign	0	(0.0)	0	(0.0)	9	(29.0)	9	(17.0)
Total	13	(100)	9	(100)	31	(100)	53	(100)

*Mixed refers to combination of government and non-government sources

Table C-3-7. Availability of accommodations attached to health facilities, by facility type and sector

Facility Type	Public						Private					
	Available		Unavailable		Total		Available		Unavailable		Total	
	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)
Hospital	9	(69.2)	4	(30.8)	13	(100)	0	(0.0)	0	(0.0)	0	(0.0)
Health center/Clinic	7	(70.0)	3	(30.0)	10	(100)	2	(100)	0	(0.0)	2	(100)
Health unit	2	(4.1)	47	(96.0)	49	(100)	--	--	--	--	--	--
Total	18	(25.0)	54	(75.0)	72	(100)	2	(100)	0	(0.0)	2	(100)

Table C-4-1. District-level summary of number of facilities with various infrastructure items available

District	Number of facilities with completed survey	Electricity		Usable Toilet(s)		Clean Water		Accommodation		Telephone Line		Garbage / Medical waste separation	
		Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Al Abdiyah	4	1	3	2	2	2	2	1	3	0	4	1	3
Al Jubah	7	3	4	6	1	6	1	3	4	1	6	7	0
Bidbadah	4	1	3	3	1	3	1	1	3	0	4	4	0
Harib	10	4	6	9	1	9	1	2	8	1	9	7	3
Harib Al Qaramish	3	0	3	1	2	3	0	1	2	0	3	1	2
Jabal Murad	8	1	7	6	2	4	4	2	6	0	8	3	5
Mahliyah	5	5	0	5	0	5	0	3	2	3	2	2	3
Majzar	3	2	1	1	2	1	2	1	2	1	2	0	3
Marib	4	1	3	3	1	3	1	0	4	0	4	0	4
Marib City	13	10	3	11	2	9	4	2	11	2	11	8	5
Medghal	1	1	0	1	0	1	0	1	0	1	0	0	1
Raghwan	1	1	0	1	0	1	0	1	0	0	1	0	1
Rahabah	6	1	5	5	1	3	3	0	6	0	6	2	4
Sirwah	5	3	2	3	2	3	2	2	3	0	5	0	5
Total	74	34	40	57	17	53	21	20	54	9	65	35	39

Table C-4-2. Sources of clean water among facilities with clean water available, by facility type and sector

Water Source	Sector												Total	
	Public								Private					
	Hospital		Health Center		Health Unit		Total		Health Clinic		Total			
	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)
Public	0	(0.0)	0	(0.0)	2	(6.5)	2	(3.9)	0	(0.0)	0	(0.0)	2	(3.8)
Public & private	0	(0.0)	1	(11.1)	0	(0.0)	1	(2.0)	0	(0.0)	0	(0.0)	1	(1.9)
Public & private & water tank	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	1	(50.0)	1	(50.0)	1	(1.9)
Public & water tank	1	(9.1)	0	(0.0)	0	(0.0)	1	(2.0)	0	(0.0)	0	(0.0)	1	(1.9)
Private	2	(18.2)	0	(0.0)	11	(35.5)	13	(25.5)	1	(50.0)	1	(50.0)	14	(26.4)
Private & water tank	1	(9.1)	0	(0.0)	0	(0.0)	1	(2.0)	0	(0.0)	0	(0.0)	1	(1.9)
Water tank	6	(54.5)	8	(88.9)	14	(45.2)	28	(54.9)	0	(0.0)	0	(0.0)	28	(52.8)
Cooperative	1	(9.1)	0	(0.0)	0	(0.0)	1	(2.0)	0	(0.0)	0	(0.0)	1	(1.9)
Other	0	(0.0)	0	(0.0)	4	(12.9)	4	(7.8)	0	(0.0)	0	(0.0)	4	(7.5)
Total	11	(100)	9	(100)	31	(100)	51	(100)	2	(100)	2	(100)	53	(100)

Table C-4-3. Sources of electricity among facilities with electricity available, by facility type and sector

Electricity Source	Sector												Total	
	Public								Private					
	Hospital		Health Center		Health Unit		Total		Health Clinic		Total			
	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)
Public	0	(0.0)	3	(50.0)	7	(53.8)	10	(31.3)	0	(0.0)	0	(0.0)	10	(29.4)
Public & private	0	(0.0)	0	(0.0)	3	(23.1)	3	(9.4)	0	(0.0)	0	(0.0)	3	(8.8)
Public & generator	4	(30.8)	0	(0.0)	0	(0.0)	4	(12.5)	2	(100)	2	(100)	6	(17.6)
Private	2	(15.4)	0	(0.0)	2	(15.4)	4	(12.5)	0	(0.0)	0	(0.0)	4	(11.8)
Private & generator	1	(7.7)	1	(16.7)	0	(0.0)	2	(6.3)	0	(0.0)	0	(0.0)	2	(5.9)
Cooperative	0	(0.0)	0	(0.0)	1	(7.7)	1	(3.1)	0	(0.0)	0	(0.0)	1	(2.9)
Cooperative & generator	1	(7.7)	0	(0.0)	0	(0.0)	1	(3.1)	0	(0.0)	0	(0.0)	1	(2.9)
Generator	5	(38.5)	2	(33.3)	0	(0.0)	7	(21.9)	0	(0.0)	0	(0.0)	7	(20.6)
Total	13	(100)	6	(100)	13	(100)	32	(100)	2	(100)	2	(100)	34	(100)

Table C-4-4. Type of sewage system (among facilities with sewage systems)

Sewage system used	Sector												Total	
	Public								Private					
	Hospital		Health Center		Health Unit		Total		Health Clinic		Total			
	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)
Pit	13	(100)	10	(100)	28	(96.6)	51	(98.1)	2	(100)	2	(100)	53	(98.1)
In the open	0	(0.0)	0	(0.0)	1	(3.4)	1	(1.9)	0	(0.0)	0	(0.0)	1	(1.9)
Total	13	(100)	10	(100)	29	(100)	52	(100)	2	(100)	2	(100)	54	(100)

Table C-4-5. Average number of daily operating hours for electricity in facilities with electricity

	Public				Private Health Clinic	Total
	Hospital	Health Center	Health Unit	Total		
Number	13	6	13	32	2	34
Mean	14.2	9.7	7.0	10.4	24.0	11.2
SD	7.3	7.3	4.1	6.8	0.0	7.4
Range	20	19	17	21	0	21
(Min - Max)	(4 - 24)	(5 - 24)	(3 - 20)	(3 - 24)	(24 - 24)	(3 - 24)

Table C-4-6. Proportion of usable toilets, by health facility type and sector

% of toilets usable	Sector											
	Public								Private			
	Hospital		Health Center		Health Unit		Total		Health Clinic		Total	
	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)
0	0	(0.0)	0	(0.0)	5	(15.6)	5	(9.1)	0	(0.0)	0	(0.0)
1 - 25	2	(15.4)	1	(10.0)	0	(0.0)	3	(5.5)	0	(0.0)	0	(0.0)
26 - 50	3	(23.1)	4	(40.0)	5	(15.6)	12	(21.8)	0	(0.0)	0	(0.0)
51 - 75	2	(15.4)	0	(0.0)	0	(0.0)	2	(3.6)	0	(0.0)	0	(0.0)
76 - 100	6	(46.2)	5	(50.0)	22	(68.8)	33	(60.0)	2	(100)	2	(100)
Total	13	(100)	10	(100)	32	(100)	55	(100)	2	(100)	2	(100)

Table C-4-7. Availability of transportation, by health facility type and sector

Transportation availability	Sector													
	Public								Private				Total	
	Hospital		Health Center		Health Unit		Total		Health Clinic		Total			
	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)
Available	1	(7.7)	0	(0.0)	0	(0.0)	1	(1.4)	1	(50.0)	1	(50.0)	2	(2.7)
Not	12	(92.3)	10	(100)	49	(100)	71	(98.6)	1	(50.0)	1	(50.0)	72	(97.3)
Total	13	(100)	10	(100)	49	(100)	72	(100)	2	(100)	2	(100)	74	(100)

Table C-4-8. Availability of means to separate medical waste and garbage

Separation of medical waste and garbage	Sector									
	Public								Private	
	Hospital		Health center		Health unit		Total		Health clinic	
	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)
Available	7	(53.8)	3	(30.0)	23	(46.9)	33	(45.8)	2	(100)
Not Available	6	(46.2)	7	(70.0)	26	(53.1)	39	(54.2)	0	(0.0)
Total	13	(100)	10	(100)	49	(100)	72	(100)	2	(100)

Table C-4-9. Means of garbage and medical waste disposal among facilities not separating medical waste and garbage

Disposal Method	Sector									
	Public								Private	
	Hospital		Health center		Health unit		Total		Health clinic	
	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)
Garbage barrels	0	(0.0)	1	(14.3)	0	(0.0)	1	(2.6)	0	(0.0)
Medical incinerator	0	(0.0)	1	(14.3)	1	(3.8)	2	(5.1)	0	(0.0)
Burned in open air	3	(50.0)	4	(57.1)	15	(57.7)	22	(56.4)	0	(0.0)
Burned & buried within the fence of the facility	0	(0.0)	1	(14.3)	0	(0.0)	1	(2.6)	0	(0.0)
Burned & buried outside the fence of the facility	1	(16.7)	0	(0.0)	7	(26.9)	8	(20.5)	0	(0.0)
Thrown in the street	2	(33.3)	0	(0.0)	3	(11.5)	5	(12.8)	0	(0.0)
Total	6	(100)	7	(100)	26	(100)	39	(100)	0	(0.0)

Table C-4-10. Means of normal garbage disposal among facilities separating medical waste and garbage

Disposal Method for Separated Garbage	Sector									
	Public								Private	
	Hospital		Health Center		Health Unit		Total		Health Clinic	
	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)
Garbage barrels	1	(14.3)	0	(0.0)	0	(0.0)	1	(3.0)	2	(100)
Burned	5	(71.4)	2	(66.7)	12	(52.2)	19	(57.6)	0	(0.0)
Buried outside facility fence	0	(0.0)	1	(33.3)	3	(13.0)	4	(12.1)	0	(0.0)
Thrown in street	1	(14.3)	0	(0.0)	8	(34.8)	9	(27.3)	0	(0.0)
Total	7	(100)	3	(100)	23	(100)	33	(100)	2	(100)

Table C-4-11. Means of medical waste disposal among facilities separating medical waste and garbage

Disposal Method for Separated Medical Waste	Sector									
	Public								Private	
	Hospital		Health Center		Health Unit		Total		Health Clinic	
	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)
Garbage barrels	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	1	(50.0)
Medical Incinerator	0	(0.0)	0	(0.0)	1	(4.3)	1	(3.0)	0	(0.0)
Burned in open area	3	(42.9)	2	(66.7)	10	(43.5)	15	(45.5)	0	(0.0)
Burned and buried within facility fence	1	(14.3)	0	(0.0)	0	(0.0)	1	(3.0)	0	(0.0)
Burned and buried outside facility fence	3	(42.9)	1	(33.3)	11	(47.8)	15	(45.5)	1	(50.0)
Other	0	(0.0)	0	(0.0)	1	(4.3)	1	(3.0)	0	(0.0)
Total	7	(100)	3	(100)	23	(100)	33	(100)	2	(100)

Figure C-4-1. Proportion of facilities with clean water, by district

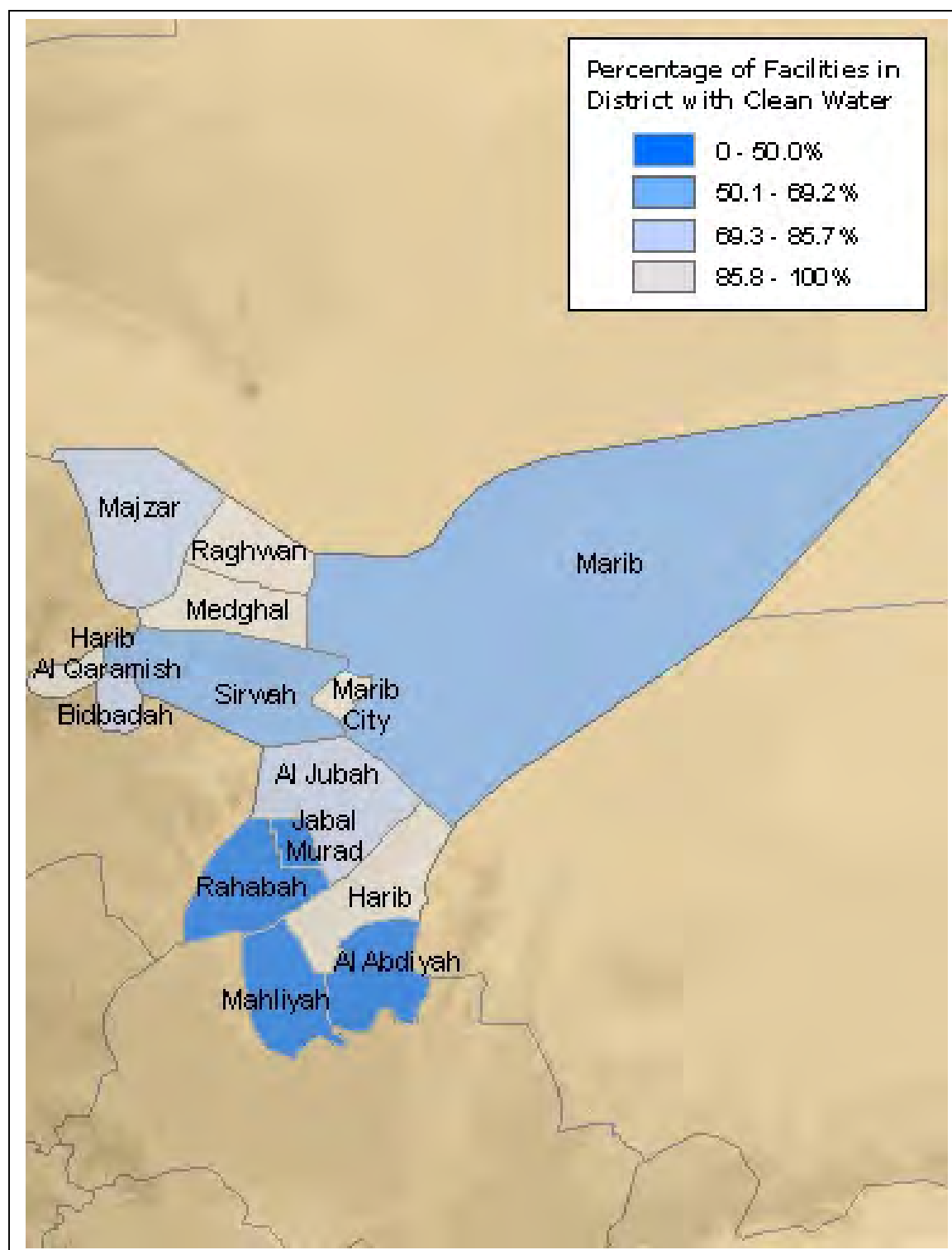


Figure C-4-2 Proportion of facilities with electricity, by district

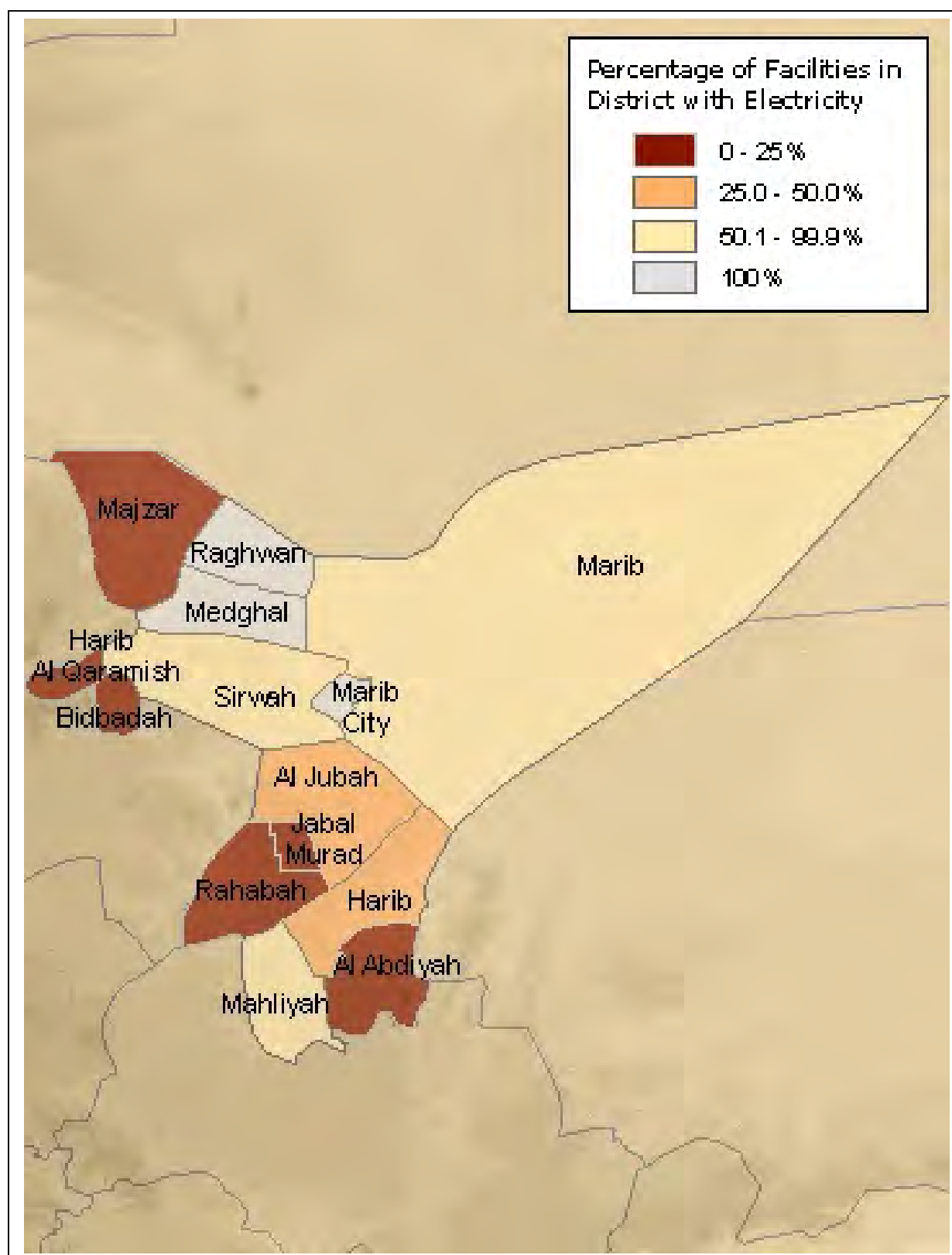


Figure C-4-3 Proportion of facilities with usable toilets, by district

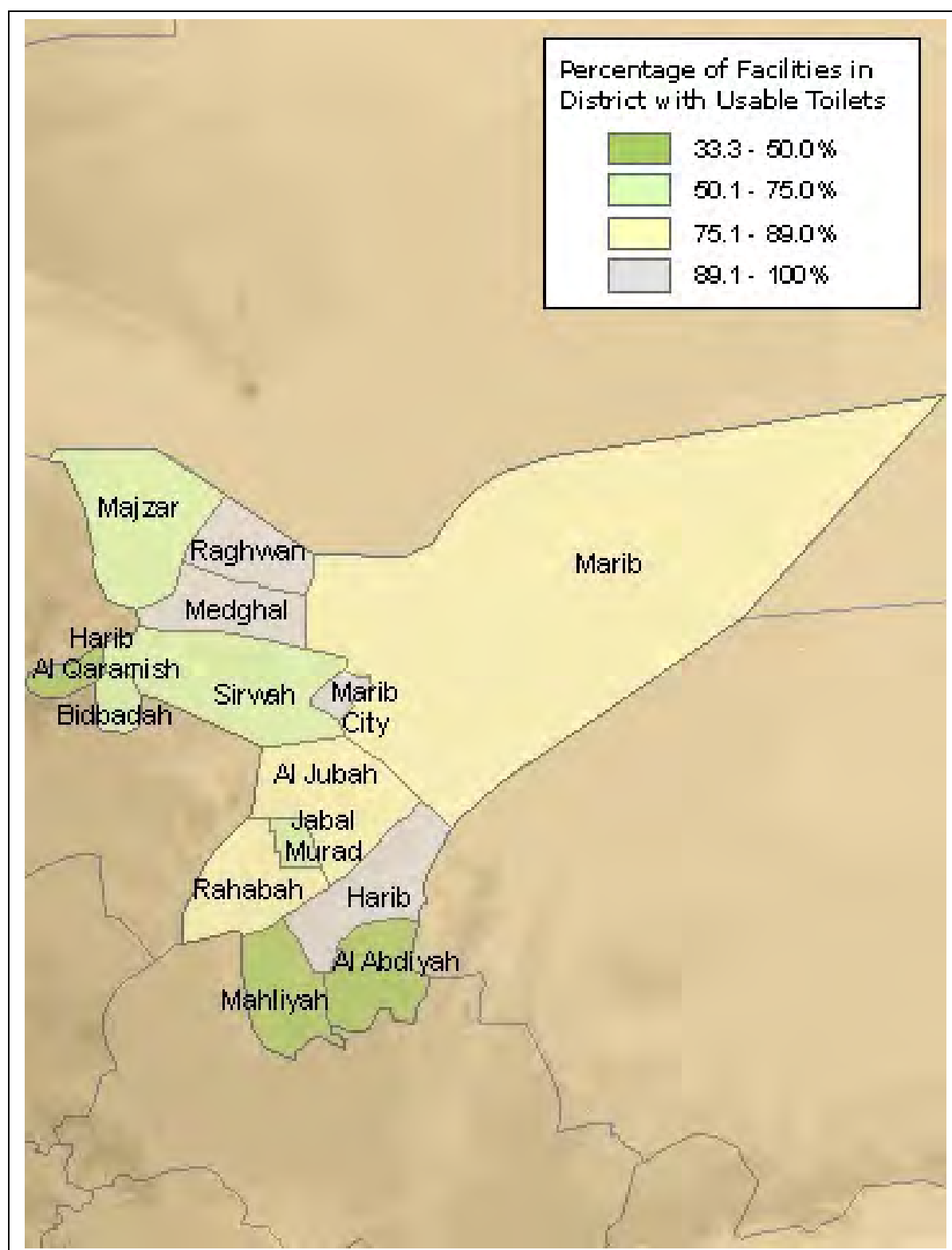


Figure C-4-4 Proportion of facilities separating medical waste and garbage, by district

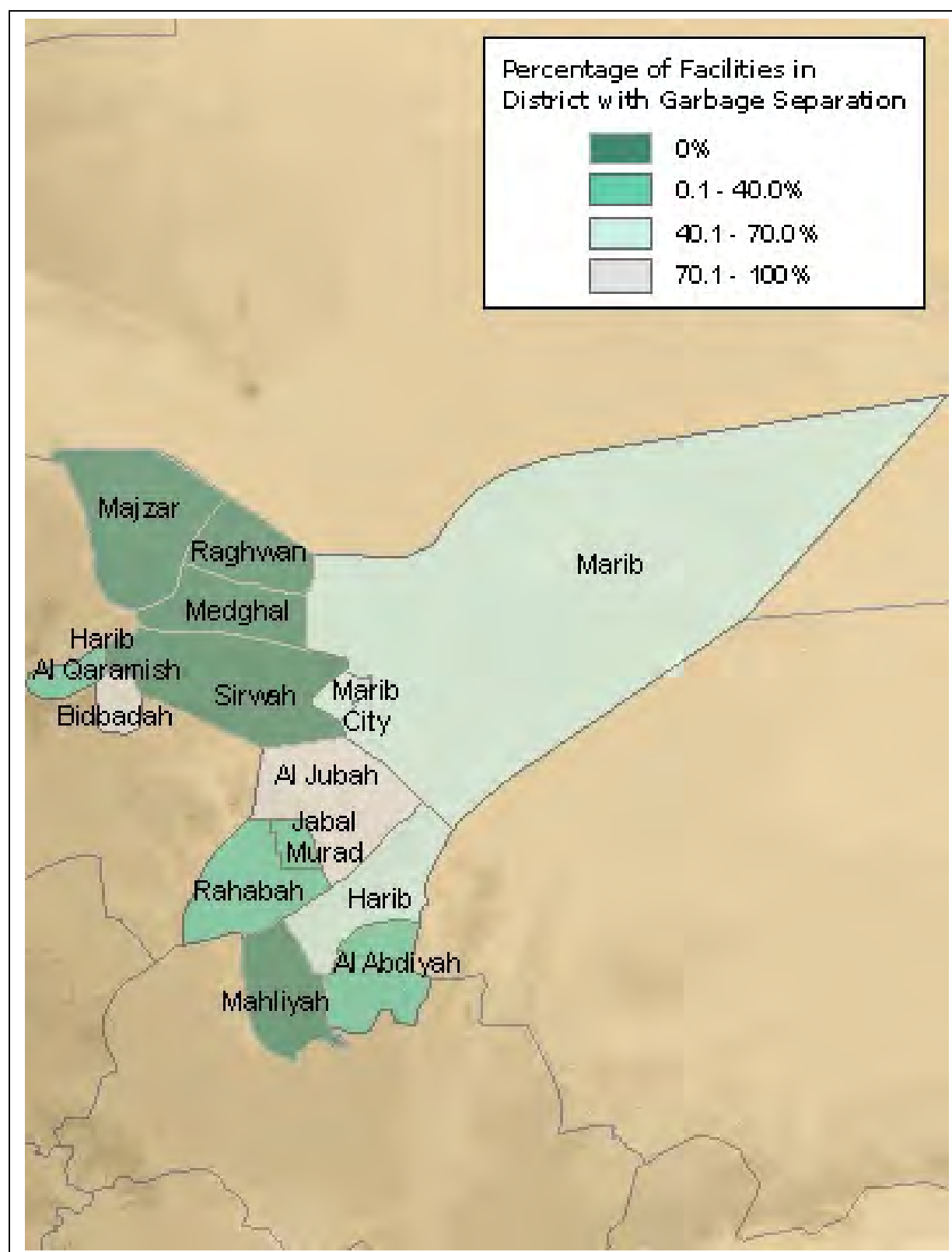


Table C-5-1. Availability of health and medical services in public sector facilities

Medical Service		Hospital n=13		H. Center n=10		H. Unit n=49		Total n=72	
		n	(%)	n	(%)	n	(%)	n	(%)
General Medicine		13	(100)	9	(90.0)	48	(97.9)	70	(97.2)
	General medicine	13	(100)	9	(100)	46	(95.8)	68	(97.1)
	Injections	13	(100)	9	(100)	47	(97.9)	69	(98.6)
	Wound dressing	13	(100)	9	(100)	48	(100)	70	(100)
Reproductive Health		11	(84.6)	7	(70.0)	14	(28.6)	32	(44.4)
	Pregnancy care	10	(90.9)	7	(100)	14	(100)	31	(96.9)
	Normal delivery	11	(100)	7	(100)	10	(71.4)	28	(87.5)
	After-delivery care	7	(63.6)	2	(28.6)	7	(50.0)	16	(50.0)
	Child growth monitoring	5	(45.5)	2	(28.6)	5	(35.7)	12	(37.5)
Immunization		13	(100)	9	(90.0)	30	(61.2)	52	(72.2)
	Women of repro. age 2 nd dose of TT	13	(100)	9	(100)	26	(86.7)	48	(92.3)
	Pregnant women 2 nd dose of TT	13	(100)	9	(100)	27	(90.0)	49	(94.2)
	Tuberculosis	13	(100)	9	(100)	26	(86.7)	48	(92.3)
	Polio + DPT 3 rd dose	13	(100)	9	(100)	29	(96.7)	51	(98.1)
	Measles	13	(100)	9	(100)	27	(90.0)	49	(94.2)
	Hepatitis B 3 rd dose	13	(100)	9	(100)	27	(90.0)	49	(94.2)
Family Planning		11	(84.6)	7	(70.0)	16	(32.7)	34	(47.2)
	Pill	11	(100)	7	(100)	16	(100)	34	(100)
	Condom	3	(27.3)	4	(57.1)	4	(25.0)	11	(32.4)
	IUD – the loop	3	(27.3)	1	(14.3)	0	(0.0)	4	(11.8)
	Injection	10	(90.0)	5	(71.4)	7	(43.8)	22	(64.7)
	Norplant	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
	Tying of tubes	1	(9.0)	0	(0.0)	0	(0.0)	1	(2.9)
Health Education		7	(53.8)	4	(40.0)	17	(34.7)	28	(38.9)
	Immunization	6	(85.7)	4	(100)	17	(100)	27	(96.4)
	Nutrition	3	(42.9)	1	(25.0)	8	(47.1)	12	(42.9)
	Education on AIDS	1	(14.3)	0	(0.0)	1	(5.9)	2	(7.1)
	Education on STDs	2	(28.6)	0	(0.0)	1	(5.9)	3	(10.7)
	Family planning	5	(71.4)	2	(50.0)	10	(58.8)	17	(60.7)
	Pregnancy care	4	(57.1)	2	(50.0)	5	(29.4)	11	(39.3)
	Natural breastfeeding	4	(57.1)	2	(50.0)	7	(41.2)	13	(46.4)
	Female circumcision	1	(14.3)	2	(50.0)	0	(0.0)	3	(10.7)
Laboratory*		11	(84.6)	3	(30.0)	NA	NA	14	(19.4)
	Urine	11	(100)	3	(100)	–	–	14	(100)
	Stool	11	(100)	3	(100)	–	–	14	(100)
	General blood	11	(100)	2	(66.7)	–	–	13	(92.9)

Medical Service		Hospital n=13		H. Center n=10		H. Unit n=49		Total n=72	
		n	(%)	n	(%)	n	(%)	n	(%)
	Blood chemistry	6	(54.5)	1	(33.3)	–	–	7	(53.8)
	Tissues	0	(0.0)	0	(0.0)	–	–	0	(0.0)
	Culture	0	(0.0)	0	(0.0)	–	–	0	(0.0)
	Hormones	2	(18.2)	0	(0.0)	–	–	2	(14.3)
	Malaria	11	(100)	3	(100)	–	–	14	(100)
	Bilharzia	6	(54.5)	1	(33.3)	–	–	7	(50.0)
Radiology*		10	(76.9)	1	(10.0)	NA	NA	11	(15.3)
	Normal X-ray	7	(70.0)	0	(0.0)	–	–	7	(63.6)
	Color X-ray	1	(10.0)	0	(0.0)	–	–	1	(9.1)
	Ultrasound	7	(70.0)	1	(100)	–	–	8	(72.7)
	Echocardiogram	0	(0.0)	0	(0.0)	–	–	0	(0.0)
	CT Scan	0	(0.0)	0	(0.0)	–	–	0	(0.0)
	MRI	0	(0.0)	0	(0.0)	–	–	0	(0.0)
	Endoscopy	0	(0.0)	0	(0.0)	–	–	0	(0.0)
Specialized Service*		2	(15.4)	1	(10.0)	NA	NA	3	(4.2)
	Internal medicine	2	(100)	0	(0.0)	–	–	2	(66.7)
	Obstetrics / Gynecology	1	(50.0)	0	(0.0)	–	–	1	(33.3)
	Pediatrics	1	(50.0)	1	(100)	–	–	2	(66.7)
	Dermatology	0	(0.0)	0	(0.0)	–	–	0	(0.0)
	ENT	0	(0.0)	0	(0.0)	–	–	0	(0.0)
	Ophthalmology	0	(0.0)	0	(0.0)	–	–	0	(0.0)
	Surgery	2	(100)	0	(0.0)	–	–	2	(66.7)
	Orthopedics	0	(0.0)	0	(0.0)	–	–	0	(0.0)
	Dental	0	(0.0)	1	(100)	–	–	1	(33.3)
	Emergency	1	(50.0)	0	(0.0)	–	–	1	(33.3)

*No health unit offered these services

Table C-5-2. Availability of health and medical services in private sector health clinics

Medical Service		Clinic n=2	
		n	(%)
General Medicine		2	(100)
	General medicine	2	(100)
	Injections	2	(100)
	Wound dressing	2	(100)
Reproductive Health		2	(100)
	Pregnancy care	1	(50.0)
	Normal delivery	2	(100)
	After-delivery care	0	(0.0)
	Child growth monitoring	0	(0.0)
Immunization		1	(50.0)
	Women of repro. age 2 nd dose of (TT)	0	(0.0)
	Pregnant women 2 nd dose of (TT)	0	(0.0)
	Tuberculosis	0	(0.0)
	Polio + DPT 3 rd dose	0	(0.0)
	Measles	0	(0.0)
	Hepatitis B 3 rd dose	1	(100)
Family Planning		2	(100)
	Pill	2	(100)
	Condom	1	(50.0)
	IUD – the loop	2	(100)
	Injection	2	(100)
	Norplant	0	(0.0)
	Tying of tubes	0	(0.0)
Health Education*		NA	NA
	Immunization	–	–
	Nutrition	–	–
	Education on AIDS	–	–
	Education on STDs	–	–
	Family planning	–	–
	Pregnancy care	–	–
	Natural breastfeeding	–	–
	Female circumcision	–	–
Laboratory		2	(100)
	Urine	2	(100)
	Stool	2	(100)
	General blood	2	(100)
	Blood chemistry	2	(100)

Medical Service		Clinic n=2	
		n	(%)
	Tissues	0	(0.0)
	Culture	1	(50.0)
	Hormones	0	(0.0)
	Malaria	2	(100)
	Bilharzia	1	(50.0)
Radiology		2	(100)
	Normal X-ray	2	(100)
	Color X-ray	2	(100)
	Ultrasound	2	(100)
	Echocardiogram	0	(0.0)
	CT scan	0	(0.0)
	MRI	0	(0.0)
	Endoscopy	0	(0.0)
Specialized Service		1	(50.0)
	Internal	1	(100)
	Obstetrics / Gynecology	1	(100)
	Pediatrics	1	(100)
	Dermatology	0	(0.0)
	ENT	1	(100)
	Ophthalmology	1	(100)
	Surgery	1	(100)
	Orthopedics	0	(0.0)
	Dental	1	(100)
	Emergency	1	(100)

*No private health clinic offered these services

Table C-5-3. Percentage of hospitals and health centers/clinics performing HIV testing, by facility type and sector

HIV Testing	Public						Private					
	Hospitals		Health Centers		Total		Hospitals		Health Clinics		Total	
	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)
Perform	3	(23.1)	1	(10.0)	4	(17.4)	0	(0.0)	2	(100)	2	(100)
Do not perform	10	(76.9)	9	(90.0)	19	(82.6)	0	(0.0)	0	(0.0)	0	(0.0)
Total	13	(100)	10	(100)	23	(100)	2	(100)	2	(100)	2	(100)

Table C-6-1. Number and proportion of facilities using infection prevention and treatment guide, by facility type and public/private sector

Facility Type	Public			Private			Total		
	n	Total	(%)	n	Total	(%)	n	Total	(%)
Hospital	9	13	(69.2)	0	0	(0.0)	9	13	(69.2)
Health center	2	10	(20.0)	1	2	(50.0)	3	12	(25.0)
Health unit	4	49	(8.2)	--	--	--	4	49	(8.2)
Total	15	72	(20.8)	1	2	(50.0)	16	74	(21.6)

Table C-7-1. Types of inpatient sections available (among facilities with inpatient sections)

Sections	Public						Private			
	Hospital n=8		Health Center n=1		Total n=9		Clinic n=2		Total n=2	
	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)
General	7	(87.5)	1	(100)	8	(88.9)	2	(100)	2	(100)
Internal medicine	1	(12.5)	0	(0.0)	1	(11.1)	0	(0.0)	0	(0.0)
General surgery	1	(12.5)	0	(0.0)	2	(11.1)	0	(0.0)	0	(0.0)
Gynecology	2	(25.0)	0	(0.0)	2	(22.2)	0	(0.0)	0	(0.0)
Pediatric	2	(25.0)	0	(0.0)	2	(22.2)	0	(0.0)	0	(0.0)
Orthopedic	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Eye surgery	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
ENT	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Urology	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Psych/Neuro	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Dermatology	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)

Table C-7-2. Average number of beds available for each inpatient section type

Inpatient section type	Statistics	Public			Private Health Clinic	Total		
		Hospital	Health Center	Total		Hospital	Health Center \Clinic	Total
Number of facilities with inpatient departments		8	1	9	2	8	3	11
General	Number	7	1	8	2	7	3	10
	Mean	12.9	8.0	12.3	13.0	12.9	11.3	12.4
	SD	7.8	--	7.4	7.1	7.8	5.8	7.0
	(Min-Max)	(5 - 25)	(8 - 8)	(5 - 25)	(8 - 18)	(5 - 25)	(8 - 18)	(5 - 25)
Internal medicine	Number	1	0	1	0	1	0	1
	Mean	16.0	--	16.0	--	16.0	--	16.0
	SD	--	--	--	--	--	--	
	(Min-Max)	(16 - 16)	--	(16 - 16)	--	(16 - 16)	--	(16 - 16)
General surgery	Number	1	0	1	0	1	0	1
	Mean	16.0	--	16.0	--	16.0	--	16.0
	SD	--	--	--	--	(16 - 16)	--	(16 - 16)
	(Min-Max)	(16 - 16)	--	(16 - 16)	--	--	--	--
Gynecology	Number	2	0	2	0	2	0	2
	Mean	18.5	--	18.5	--	18.5	--	18.5
	SD	9.2	--	9.2	--	9.2	--	9.2
	(Min-Max)	(12 - 25)	--	(12 - 25)	--	(12 - 25)	--	(12 - 25)
Pediatric	Number	2	0	2	0	2	0	2
	Mean	11.0	--	11.0	--	11.0	--	11.0
	SD	4.2	--	4.2	--	4.2	--	4.2
	(Min-Max)	(8 - 14)	--	(8 - 14)	--	(8 - 14)	--	(8 - 14)
Total	Number	13	1	14	2	13	3	16
	Mean	13.9	8.0	13.5	13.0	13.9	11.3	13.4
	SD	6.7	--	6.7	7.1	6.7	5.8	6.5
	(Min-Max)	(5 - 25)	(8 - 8)	(5 - 25)	(8 - 18)	(5 - 25)	(8 - 18)	(5 - 25)

**Table C-7-3. Average number of discharges during previous month for each inpatient section type
(among facilities with inpatient sections)**

Inpatient section type	Statistics	Public			Private Health Clinic	Total		
		Hospital	Health Center	Total		Hospital	Health Center\Clinic	Total
General	Number	7	1	8	2	7	3	10
	Mean	63.3	30.0	59.1	5.5	63.3	13.7	48.4
	SD	98.8	--	92.2	3.5	98.8	14.4	84.4
	(Min-Max)	(0 - 250)	(30 - 30)	(0 - 250)	(3 - 8)	(0 - 250)	(3 - 30)	(0 - 250)
Internal medicine	Number	1	0	1	0	1	0	1
	Mean	15.0	--	15.0	--	15.0	--	15.0
	SD	--	--	--	--	--	--	--
	(Min-Max)	(15 - 15)	--	(15 - 15)	--	(15 - 15)	--	(15 - 15)
General surgery	Number	1	0	1	0	1	0	1
	Mean	16.0	--	16.0	--	16.0	--	16.0
	(Min-Max)	--	--	--	--	--	--	--
	SD	(16 - 16)	--	(16 - 16)	--	(16 - 16)	--	(16 - 16)
Gynecology	Number	2	0	2	0	2	0	2
	Mean	21.0	--	21.0	--	21.0	--	21.0
	SD	1.4	--	1.4	--	1.4	--	1.4
	(Min-Max)	(20 - 22)	--	(20 - 22)	--	(20 - 22)	--	(20 - 22)
Pediatric	Number	2	0	2	0	2	0	2
	Mean	9.0	--	9.0	--	9.0	--	9.0
	SD	8.5	--	8.5	--	8.5	--	8.5
	(Min-Max)	(3 - 15)	--	(3 - 15)	--	(3 - 15)	--	(3 - 15)
Total	Number	13	1	14	2	13	3	16
	Mean	41.1	30.0	40.3	5.5	41.1	13.7	35.9
	SD	74.3	--	71.4	3.5	74.3	14.4	67.6
	(Min-Max)	(0 - 250)	(30 - 30)	(0 - 250)	(3 - 8)	(0 - 250)	(3 - 30)	(0 - 250)

Table C-7-4. Average nightly cost (Yemeni riyals) for different types of rooms (among facilities with inpatient sections)

Room type	Statistics	Public			Private	
		Hospital	Health Center	Total	Health Clinic	Total
Individual room	Number	--	--	--	1	1
	Mean	--	--	--	2000	2000
	SD	--	--	--	--	--
	(Min-Max)	--	--	--	(2000-2000)	(2000-2000)
Common room	Number	8	1	9	2	2
	Mean	175.0	--	175.0	1000	1000
	SD	221.7	--	221.7	0.0	0.0
	(Min-Max)	(0 - 500)	--	(0 - 500)	(1000-1000)	(1000-1000)
Intensive care	Number	--	--	--	1	1
	Mean	--	--	--	3000	3000
	SD	--	--	--	--	--
	(Min-Max)	--	--	--	(3000-3000)	(3000-3000)
Total	Number	8	1	9	2	2
	Mean	175.0	--	175.0	1750	1750
	SD	221.7	--	221.7	957.4	957.4
	(Min-Max)	(0 - 500)	--	(0 - 500)	(1000-3000)	(1000-3000)

Table C-10-1. Sources of drugs in public sector facilities (among those that had drugs available)

Source	Hospital		Health Center		Heath Unit		Total	
	n	(%)	n	(%)	n	(%)	n	(%)
Governorate	11	(91.7)	7	(87.5)	25	(67.6)	43	(75.4)
District	0	(0.0)	1	(12.5)	12	(32.4)	12	(21.1)
MoPHP	1	(8.3)	0	(0.0)	0	(0.0)	1	(1.8)
Private	0	(0.0)	0	(0.0)	1	(2.7)	1	(1.8)
Total	12	(100)	8	(100)	37	(100)	57	(100)

Table C-11-1. Periodicity of delivering operational expenses in public facilities in the last year

Delivery of operational expenses	Facility Type							
	Hospital		Health Center		Health Unit		Total	
	n	(%)	n	(%)	n	(%)	n	(%)
Regular	9	(69.2)	9	(90.0)	24	(49.0)	42	(58.3)
Irregular	4	(30.8)	1	(10.0)	13	(26.5)	18	(25.0)
Unspecified	0	(0.0)	0	(0.0)	12	(24.5)	12	(16.7)
Total	13	(100)	10	(100)	49	(100)	72	(100)

Table C-11-2. Types of exemptions available among public facilities with exemption systems in place

Exemption type	Facility Type							
	Hospital		Health Center		Health Unit		Total	
	n	(%)	n	(%)	n	(%)	n	(%)
Free service	6	(50.0)	5	(100)	14	(63.6)	25	(64.1)
Reduced cost	6	(50.0)	0	(0.0)	8	(36.4)	14	(35.9)
In-kind	0	(0.0)	0	(0.0)	0	(0.0)	0	(0.0)
Total	12	(100)	5	(100)	22	(100)	39	(100)